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Lisbon

37th Congress of the
Société Internationale d'Urologie
Centro de Congressos de Lisboa

October 19-22, 2017

Featuring
SIU-ICUD Joint Consultation on Bladder Cancer
3rd SIU Nurses' Educational Symposium
Pre-37th SIU Semi Live GURS Workshop

ABSTRACT BOOK

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ABSTRACT BOOK

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MP-01.01

Metabolic Syndrome Is Predictive of Lower Urinary Tract Symptom Improvement after Holmium Laser Enucleation of the Prostate for Benign Prostatic Obstruction

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Introduction and Objective: Current research emphasizes the relationship between benign prostatic hyperplasia (BPH) with/without lower urinary tract symptoms (LUTS) and metabolic syndrome (MS), with a focus on the worsening of LUTS caused by MS. Therefore, we investigated the effect of MS on patient outcomes who underwent holmium laser enucleation of the prostate (HoLEP) for benign prostatic obstruction.

Materials and Methods: Data from 151 patients who underwent HoLEP by a single surgeon between March 2012 and March 2016 were retrospectively analyzed. Patients with MS were assigned to group 1 (n=33) and patients without MS in group 2 (n=118). Clinical characteristics and the International Prostate Symptom Score (IPSS), including quality of life (QoL), peak urinary flow rate (Qmax), and postvoid residual urine (PVR), before surgery and 3 months afterwards were compared between groups. Additionally, predictors of total IPSS improvement after HoLEP were assessed.

Results: Compared with group 2 patients, group 1 patients were older (70.3 vs 65.2 years old, p=0.001). Preoperative data, which included prostate volume, QoL, Qmax, and PVR, were not different between groups. For all patients, both the storage subscore and voiding subscore significantly decreased after surgery ($p < 0.001$). Postoperative total IPSS and voiding subscore improvement in group 1 were lower than in group 2 (total IPSS improvement 9.2 vs 12.5, p=0. 042; voiding subscore improvement 6.6 vs 8.8, p=0.048). Multivariate analysis showed preoperative total IPSS (β=0.79, CI 0.71–0.94, $p < 0.001$) and number of MS components (β=−0.15, CI −2.04 to −0.29, p=0.009) were independently associated with total IPSS improvement.

Conclusions: We found that MS was associated with decreased postoperative symptom improvement. Thus, lower urinary tract symptoms after surgery may be a systemic disorder due multiple metabolic risk factors.

MP-01.02

Impact of Detrusor Underactivity on Functional Outcomes after Prostate Surgery in Patients with LUTS due to Benign Prostatic Enlargement

Plata M, Bravo-Balado A, Robledo D, Albarracín N, Barco C, Caicedo JI, Trujillo CG, Cataño JG, Serrano A

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Introduction and Objective: To determine the differences in functional outcomes of males with lower urinary tract symptoms (LUTS) with or without detrusor underactivity (DU) who underwent photoselective vaporization of the prostate (PVP) with GreenLight™180W XPS.

Materials and Methods: We conducted a retrospective observational study. Patients were categorized into two groups: A. LUTS without DU and B. LUTS with DU. Patients were assessed preoperatively with urodynamic studies (UDS) and pre and postoperatively with the International Prostate Symptom Score (IPSS). A bivariate analysis using X2 and Mann–Whitney U test was conducted. A univariate logistic regression analysis was also performed. All analyses were conducted using STATA 14.

Results: A total of 354 patients were included: 196 (55.4%) had LUTS without DU (Group A) and 158 (44.6%) LUTS with DU (Group B). Baseline characteristics are summarized in Table 1. Median follow-up was 22 (IQR 9.0-33.5) and 30 (IQR 12.0-37.0) months in groups A and B, respectively. A comparison of postoperative outcomes is summarized in Table 2. The logistic regression analysis found that postoperative urinary retention was more likely to occur in patients with DU (OR=2.8, 95%CI 1.3-5.8, p=0.01).

Conclusions: Although patients with DU were more likely to present with urinary retention in the early postoperative period, in the long-term, there were no statistically significant differences among patients with DU compared to patients with normal detrusor contractility regarding their IPSS, satisfaction and success rates. There is a slight statistically significant difference in the postoperative quality of life favoring patients without DU.

MP-01.03

PSA Change after Alpha Blocker Therapy in BPH

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Introduction and Objective: Adrenergic α-blocker is widely used as a primary therapy in BPH. We aimed to retrospectively investigate the effect of α-blocker on serum PSA changes.

Materials and Methods: Clinical data including serum PSA changes, IPSS, and TRUS of 51 male BPH patients with α-blocker more than 6 months were retrospectively analyzed. Subject patients were aged more than 50 years old. Presence or history of prostate cancer, acute urinary retention, chronic prostatitis, and patients under androgen replacement therapy were excluded in this study.

Results: Mean age of patients was 69.0 (60~79) years old. α-blockers were tamsulosin in 39 patients, alfuzosin 6 patients, doxazosin 5 patients, terazocin 1 patients. Initial level of PSA (median) was 4.4 (0.3~28.1) ng/mL, and 3.0 (0.3~28.8)ng/mL in 6 months later

MP-01.02, Table 1. Baseline Characteristics and Preoperative Clinical Findings

	Group A (n=196)	Group B (n=158)
Prostate volume (mL) (median, IQR)	72.7 (47.4-94.8)	57.5 (41.0-78.5)
IPSS (mean ± SD)	19.1 ± 7.5	19.3 ± 7.6
QoL (median, IQR)	4.0 (3.0-5.0)	4.0 (3.8-5.0)
History of acute urinary retention (%)	39.0 (20.5)	52.0 (34.4)
Qmax (mL/sec) (median, IQR)	10.2 (6.7-13.8)	8.1 (5.0-12.6)
PVR (mL) (median, IQR)	200.0 (121.3-300.0)	250.0 (145.0-450.0)
Pdet at Qmax (cmH_2O) (median, IQR)	81.1 (65.7-100.9)	51.0 (38.5-62.5)
BOOI (median, IQR)	62.2 (46.0-88.8)	40 (27.1-52.4)
BCI (median, IQR)	120.6 (107.0-140.2)	79.2 (63.7-89.2)
Voiding urine volume (mL) (mean ± SD)	299.1 ± 155.0	193.8 ± 144.4

SD=standard deviation, IQR=interquartile range, IPSS=International Prostate Symptom Score, QoL=quality of life, Qmax=maximum urinary flow rate, PVR=post-void residual urine, BOOI=bladder outlet obstruction index, BCI=bladder contractility index

MP-01.02, Table 2. Comparison of Postoperative Outcomes

	Group A (n=196)	Group B (n=158)	*p*
IPSS (median, IQR)	5.0 (1.0-8.0)	4.0 (2.0-7.3)	0.79
QoL (median, IQR)	1.0 (0.0 -2.0)	2.0 (1.0-2.0)	0.05
Success rate (%) (median, IQR)	90 (80.0-100.0)	90 (80.0-95.0)	0.23
Satisfied (%)	74 (85.0)	52 (81.3)	0.66
Duration of hospitalization (h) (median, IQR)	21.5 (19.5-25.5)	22.5 (19.0-27.8)	0.53
Duration of catheterization (h) (median, IQR)	17.6 (14.5-22.5)	16.5 (14.1-19.9)	0.09

IQR=interquartile range, IPSS=International Prostate Symptom Score, QoL=quality of life

with α -blocker administration. Median F/U duration was 18.5(6~75) months. PSA level were compared by paired samples T-test and their changes were statistically significant (p=0.030).

Conclusion: PSA in patients with α -blocker monotherapy more than 6 months showed to be decreased. Induction of apoptosis and decreased prostatic cellular activity due to relieved bladder outlet obstruction by the α-blockers may explain this changes of PSA. Although larger data analysis is required, effect of long-term use of α-blocker should be carefully considered when screening prostate cancer using PSA.

MP-01.04

Long-term Administration of Mirabegron in the Treatment of OverActive Bladder (OAB)

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Introduction and Objective: The beta3-adrenergic agonist mirabegron is often used for the treatment of OAB because of its fewer adverse events. This study is to evaluate long-term administration of mirabegron at university hospital retrospectively.

Materials and Methods: We enrolled 217 patients (male 119, female 98) who received mirabegron between September 2011 and August 2016 and investigated how long mirabegron was taken for and the reason for discontinuation. We evaluated the clinical characteristics to influence the interruption of mirabegron.

Results: The mean age of the patients was 73.4±9.5 years, and 167 patients (76.9%) had discontinued the treatment in median 256 days (7-1756 days). The Kaplan-Meier method showed that the continuation rate at 3 month was 98%, at 6 month was 92.4%, at 1 year was 85.4% and 2 years was 58.5%. The reason for discontinuation was 62/167(37.1%) insufficient treatment efficacy, 28/167 (16.8%) adverse event, 21/167(12.6%) spontaneous improvement and 57/167(34.1%) dropout. The details of adverse events were 3 high blood pressure, 3 arrhythmia, 6 dysuria, 2 urinary retention, 7 gastrointestinal symptom and so on. Female patients discontinued 75.5% and male patients discontinued 78.2% (not significant). There was no difference in persistency rate of mirabegron by whether the age was more than 65 years old or less than 65 years old and also was more than 75 years old or less than 75 years old. In the group of patients with comorbidities was lower treatment persistency rate than the patients without comorbidity (p<0.05). Especially the patients with hypertension discontinued the treatment more than the patients without hypertension (p<0.05). There was no difference by whether anticholinergic treatment was taken before. But by the combination of internal use of mirabegron and antimuscarinics, a rate of discontinuation of mirabegron was high (p<0.05). Limitations include retrospective design and data from single institute.

Conclusion: In our study, the discontinuation rate of mirabegron was 76.9% and this was similar to anticholinergic agent previously reported. The major reason of interruption was insufficient treatment efficacy, adverse event and dropout. The patients with comorbidities and with hypertension canceled mirabegron more than the patients without these. The patients treated with mirabegron and antimuscarinics had high rate of discontinuation of miraberon. This is the first reports mentioned about the discontinuation factors.

MP-01.05

Subgroup Analyses of Triple Therapy with Tamsulosin, Dutasteride and Imidafenacin for Benign Prostatic Hyperplasia Patients with Overactive Bladder Symptoms Refractory to Tamsulosin (52-Week Randomized Comparative Study: Direct Study)

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Introduction and Objectives: As previously reported in EAU17, tamsulosin + dutasteride + imidafenacin therapy (TDI) demonstrated significantly superior efficacy to tamsulosin + dutasteride therapy (TD) for the primary endpoint of OABSS for 52wks treatment. Subgroup analyses were performed to explore factors affecting the difference in improvement of OAB symptoms between the two therapy groups.

Materials and Methods: Patients with BPH, aged 50 to 89, prostate volume (≥ 30 mL) and remaining OAB symptoms even after ≥8-wks tamsulosin treatment were randomised to either TD or TDI. The study was approved by IEC and written informed consent was obtained from each patient. Subgroup analyses were performed to evaluate the superiority in efficacy assessed with OABSS of TDI over TD between the subgroups divided according to factors (ex. age, IPSS, QOL so on) at baseline or 24-wks. For each factor, patients were divided into two subgroups based on the median, and statistical analysis using the mixed-effects model including an interaction term was performed.

Results: One hundred and sixty three enrolled patients were randomized to either TD (81) or TDI (82). Of these patients, primary endpoint data were collected from 140 subjects (71: TD, 69: TDI) and 125 subjects (63: TD, 62: TDI) at 24wks and 52wks, respectively. The baseline characteristics of patients were similar between TD and TDI. The effects of factors on OABSS were analyzed between two subgroups, testosterone and PVR showed significant difference regarding the superiority of TDI over TD in terms of the improvement in OABSS from baseline to 52wks (p=0.043 and p=0.018 for the interaction term, respectively). As for the secondary endpoints, some significant differences in superiority of efficacy for TDI were observed between two subgroups. After 24wks, no adverse event was reported in TD and dry mouth, erectile dysfunction, blurred vision, constipation, and pneumonia were reported in TDI.

Conclusion: Triple therapy with tamsulosin, dutasteride, and imidafenacin is suggested to be a therapeutic option for BPH patients with remaining OAB symptoms refractory to tamsulosin, regardless of severity of OAB symptoms.

MP-01.06

Effect of T-Type Calcium Channel Blocker Mibefradil on Cyclophosphamide-Induced Cystitis in Mice

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Introduction and Objective: There are several types of calcium channels which differ in their location and function. Included in the group of calcium channels are T-type channels and L-type channels. Mibefradil is a T-type calcium channel blocker. Blockage of calcium channels in vascular smooth muscle results in relaxation. The effects of mibefradil on cyclophosphamide-induced cystitis in mouse were investigated.

Materials and Methods: To evaluate the role of T-type calcium channel for voiding, capsaicin was injected intravesically to alpha1H T-type calcium channel ($Ca_v3.2$) lacking mice and $Ca_v3.2$ null mutation mice. Cystometry (CMG) was performed. Inter-contraction inverval (ICI), pressure threshold (PT) and maximum voiding pressure (MVP) were measured. On the other hands, to evaluate the effect mibefradil, cyclophosphamide-induced cystitis mice were generated. After then, dose-response curves were constructed by administering increasing dose of mibefradil (0.1, 0.5, and 1mg/kg intraperitoneally).

Results: In $Ca_v3.2$ lacking mice, ICIs were not changed (control vs capsaicin 20μM/ml vs capsaicin 50μM/ml, 245.8±24.6 vs 250.2±21.3 vs 243.3±22.5 sec) (p>0.05). But in $Ca_v3.2$ null mutation mice, ICIs were significantly decreased (control vs capsaicin 20μM/ml vs capsaicin 50μM/ml; 342.1±29.02 vs 284.5±19.58 vs 241.9±16.96 sec) (p<0.05). In cyclophosphamide-induced cystitis model, voiding parameters were not changed after intraperitoneally injection of saline as control (71.13±15.31 sec) (p>0.05). Low doses of mibefradil (0.1mg/kg) did not alter any CMG parameter, whereas 0.5mg/kg and 1mg/kg dosages of mibefradil significantly increased the ICI (control vs mibefradil 0.5mg/kg 71.1±15.3 vs 124.6±24.7 and control vs mibefadil 1mg/kg 71.1±15.3 vs 175.5±30.9 sec) (p<0.01). But MVP and PT were not changed.

Conclusions: In $Ca_v3.2$ lacking mice, capsaicin had no effect on voiding. It was considered that pain signal from dorsal root ganglion was blocked in $Ca_v3.2$ lacking mice. Mibefradil (0.5mg/kg and 1mg/kg) has significantly induced increase of the ICI on cyclophosphamide-induced cystitis in mouse. These results suggest that T-type calcium channel blocker is possible drug as treatment agent of overactive bladder.

MP-01.07

Does High Ejaculation Frequency Increase the Risk of Prostate Cancer in Asian Men, as Has Been Observed for BPH/LUTS?

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Introduction and Objective: Ejaculation frequency, including sexual intercourse, nocturnal emissions, and masturbation, affect the development of prostate disease, such as benign prostatic hyperplasia (BPH)/

lower urinary tract symptoms (LUTS), and cancer. In this prospective study, we investigated the association between ejaculation frequency and risk of prostate cancer in Asian men.

Materials and Methods: Between May 2015 and September 2016, a total of 304 men (154 in our health examination center, 150 in our urology outpatient department) participated in this study. The monthly ejaculation frequency, overall sexual satisfaction, and other determinants of sexual function including alcohol consumption, smoking, body mass index, and history of sexually transmitted infections were assessed using a self-administered questionnaire. Ejaculation frequency was assessed by asking participants to report the average number of ejaculations they had per month. Prostate specific antigen (PSA), prostate volume (PV) and International Prostate Symptom Score (IPSS) were also assessed in all participants. BPH/LUTS was defined as PV ≧ 25 gm, and IPSS ≧ 8. Prostate biopsy was performed on patients with PSA ≧ 4 ng/ml, or those who had abnormal findings in the rectal examination or transrectal ultrasound.

Results: Of 304 patients, 140 were diagnosed with BPH/LUTS (Group I, mean age ± SD: 59.2 ± 4.1 years), 40 were diagnosed with prostate cancer (Group II, mean age ± SD: 57.6 ± 4.2 years) and 124 were in the healthy control group (Group III, mean age ± SD: 51.1 ± 9.4 years). Mean number of ejaculations per month was 4.8 ± 1.7. Ejaculation frequency was inversely associated with age, but positively associated with degree of sexual satisfaction, history of sexually transmitted infection, and consumption of alcohol. After controlling for potential confounders, a higher monthly ejaculation frequency was associated with a statistically significantly decreased risk of prostate cancer and BPH/LUTS ($P = 0.002$, $P = 0.001$, respectively).

Conclusion: Our findings suggest that ejaculation frequency is related to a decreased risk of BPH/LUTS as well as prostate cancer. These results may support a role for ejaculation frequency in the etiology of prostate cancer in Asian men, as has been previously reported for BPH/LUTS.

MP-01.08

Prospective Correlation of a New Modified Visual Prostate Symptom Score with IPSS and Uroflowmetry in Men with LUTS Due to BPH and Urethral Stricture

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Introduction and Objective: Quantification of Lower urinary tract symptoms (LUTS) due to benign prostatic enlargement (BPE) and Urethral stricture disease with self-reported questionnaire is important. Pictorial questionnaire visual prostate symptom score (VPSS) correlates with International prostate symptom score (IPSS) and can be used to evaluate LUTS in men with limited education. VPSS covers only 4 questions instead of 8 in IPSS. The aim of present study is to develop a comprehensive seven question pictorial tool adding straining, hesitancy, urgency with and without incontinence in addition to 4 questions of VPSS for a total score of 35, and to determine correlation of this modified VPSS with IPSS, VPSS and uroflowmetry.

Materials and Methods: From January 2016 to august 2016, 100 male patients with LUTS secondary to BPE and urethral stricture disease were included in the study. Patients on catheter or previous surgery were excluded. Patients underwent physical examination, Trans abdominal Ultrasound, urine analysis, uroflowmetry and were asked to fill validated IPSS, VPSS, and Modified VPSS questionnaire in the outpatient department. Patient's education level, time taken to fill and ability to fill were also recorded

Results: Mean age was 61.3 yrs (SD 11.7). Fourteen percent of patients had no education, 26% had primary education, 34% had secondary education and 26% had higher education. Time taken to fill Modified VPSS was significantly shorter than IPSS (262 sec vs. 371sec). Non parametric spearmanâ€™s rank correlation coefficient shows that correlation between IPSS score and modified VPSS score was 0.869 ($P < 0.001$) while that for VPSS and IPSS was 0.773 ($P < 0.001$). When correlation between maximum flow rate (Qmax) and three scores was analyzed negative correlation was stronger with modified VPSS (-0.569) than IPSS (-0.515) and VPSS (-0.384). Similar trend of negative correlation was seen with average flow rate (Q ave).

Conclusion: In a developing country where literacy in rural and semi urban areas is low, this serves as an excellent tool for assessing lower urinary tract symptoms quantitatively and qualitatively. New modified VPSS by pictorial representation of LUTS due to BPE and stricture urethra is more comprehensive with addition of 3 added symptoms and correlates well with urinary flow rates. Future studies can also be directed at assessing correlation of this score for treatment related outcomes.

MP-01.09

Prostatic Artery Embolization (PAE) Is Effective for Benign Prostatic Hyperplasia with or Without Urinary Retention: Result from a Pilot Study

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Introduction and Objective: To evaluate the safety and efficacy of Prostatic artery embolization (PAE) for benign prostatic hyperplasia (BPH) with or without acute urinary retention (AUR).

Materials and Methods: This is a prospective cohort study approved by the institutional review board. 58 consecutive men of age 50-80 with prostates 40g or above were recruited for PAE, among them 22 had AUR who failed to wean off catheter. All patients had urodynamic confirmation of obstruction. Bilateral PAE was performed with microspheres of size 100 microns under local anaesthesia.

Results: Mean prostate size was 85.0ml. Embolization of prostatic arteries was successful on both sides in 52 (89.7%), on one side only in 4 (6.9%), and none in 2 (3.4%). The mean procedure time was 116 minutes. Weaning off of the bladder catheter in the AUR group was successful in 54.5% (12/22) in first 7 days, and in 86.4% (19/22) of patients within 18 days. Mean IPSS improved from 20.5 at baseline to 5.0 at 3 months, 3.7 at 6 months, and 2.4 at 12 months (all $p<0.001$, paired sample T-test). Mean QOL reduced from 4.8 at baseline to 1.6 at 3 months, 1.1 at 6 months, and 0.6 at 12 months (all $p<0.001$). Mean peak flow rate (Qmax, ml/s) improved from 5.4 at baseline to 11.5 at 3 months, 10.3 at 6 months, and 10.1 at 12 months (all $p<0.001$). Mean post-void residual urine reduced from 180ml at baseline to 86ml at 3 months ($p<0.001$), 32ml at 6 months ($p<0.001$), and 93ml ($p=0.014$). Pre and post-PAE Urodynamic studies were performed in 20 patients, and the mean bladder outlet obstruction index reduced from 91 to 51 ($p<0.001$). Prostate volume reduced by 18.9% at 2 weeks ($p<0.001$) and 25.8% at 6 months ($p<0.001$). There was no worsening of ejaculatory or erectile function. In terms of complications, 2 had groin puncture site hematoma which resolved within a few days, 1 had mild intermittent claudication of the right calf for 6 weeks. Four (6.9%) eventually required TURP.

Conclusion: PAE under local anaesthesia was a safe and effective treatment for men with BPH with or without AUR. Most men with AUR on catheter had successful weaning off of catheter after PAE.

MP-01.10

Four year Durability after Crossover to Prostatic Uro-Lift Procedure

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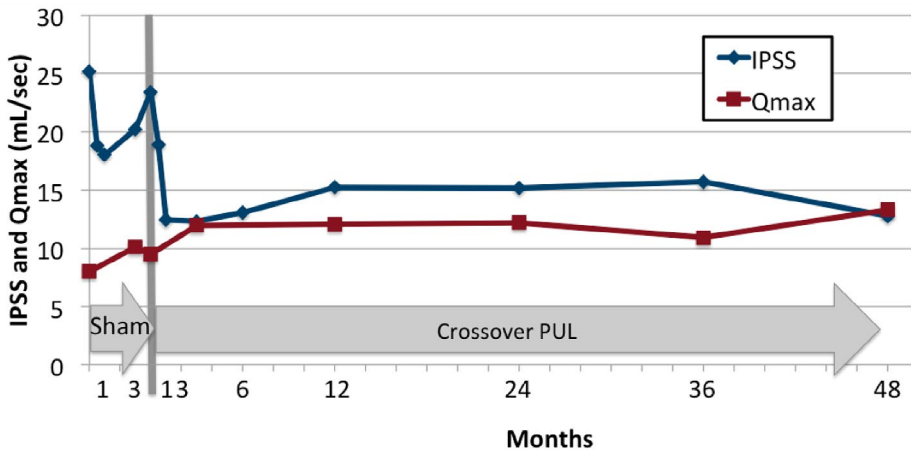
Introduction and Objectives: In a novel study design for medical devices, patients who received a blinded sham to mimic the Prostatic Urethral Lift (PUL) were unblinded after three months and then underwent PUL. As such, each patient acted as his own control in a comparative analysis. We present the 4-year durability data from this study.

Materials and Methods: Fifty-three patients underwent sham procedure as part of the blinded, randomized L.I.F.T. study at 19 centers and elected to enroll in this crossover study. The crossover procedure involved placement of permanent UroLift® implants into the prostatic lateral lobes. Patients were followed for 3 months after sham and then 4 years after crossover PUL with assessments of urinary symptom relief, quality of life, urinary flow rate, sexual function, and adverse events.

Results: At 4 years after crossover procedure, average IPSS, quality of life (QOL), and BPH Impact Index (BPHII) remained improved 45%, 49%, and 44% from baseline, respectively ($p<0.001$). Mean peak flow rate (Qmax) increase of greater than 50% was also durable to 4 years ($p=0.01$). Both IPSS and Qmax improved within 2 weeks of sham. IPSS returned to near baseline after 3 months of sham, while flow remained slightly elevated (Figure 1). After crossover PUL, both symptoms and flow improved to a greater extent than after sham, and remained durable to 4 years. There were no reported instances of de novo, sustained erectile or ejaculatory dysfunction. Patients returned to normal activity within 7 days of crossover PUL. Adverse

MP-01.10, Figure 1.



events associated with the procedure were typically mild to moderate and resolved within 2 weeks.

Conclusions: The Prostatic Urethral Lift procedure offers patients rapid and durable relief in symptoms, increased urinary flow rate and improved quality of life. Morbidity has been shown to be low and sexual function is preserved. The crossover study design produced results similar to those obtained in randomized comparison.

MP-01.11

The WATER Study – A Phase III Double-Blind Randomized Control Trial of Aquablation vs Transurethral Resection of the Prostate for Moderate-To-Severe Luts Due to Benign Prostatic Hyperplasia

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Introduction and Objective: Prostate resection for patients with LUTS remains the most common procedure for surgical treatment of BPH. A prospective single-arm multicenter trial using Aquablation at 3 centers in Australia and New Zealand with 1-year follow-up on 21 men with a similar profile to WATER has been previously presented. We compared the safety and efficacy of prostate ablation using a high-velocity waterjet (Aquablation) with TURP in the WATER study.

Materials and Methods: In this randomized, double-blind, multicenter phase III trial, patients with moderate-to-severe LUTS related to BPH were assigned to standard TURP or Aquablation. The trial had a co-primary safety and efficacy endpoint designed to show non-inferiority. With a minimum enrollment of 177, the estimated power for safety was 99% and efficacy was 80%. The primary safety endpoint was the occurrence of Clavien-Dindo Grade 1 or higher peri-operative complications at 3 months. The primary efficacy endpoint was the reduction at 6 months in IPSS score.

Results: The geographic enrollment from the US and International sites was 93 and 91 subjects respectively. The baseline IPSS score (TURP 22.2, Aquablation 22.9, p=0.47) and prostate volume (TURP 52.0 mL, Aquablation 54.3 mL, p=0.31) were similar in both arms (Table 1). Total operative time was equivalent between the two groups, but ablation/resection time was less in the Aquablation group (28 vs. 4 minutes, p

Conclusions: Early results suggest similar safety and efficacy between the two treatments.

MP-01.12

Cost-effectiveness analysis of Monopolar Transurethral Resection versus Photovaporization of the Prostate with GreenLight laser 180W XPS for Lower Urinary Tract Symptoms Treatment in Colombia

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Introduction and Objective: The use of photovaporization of the prostate (PVP) in patients with benign prostatic hyperplasia (BPH) is associated with less hospital stay and complications, which might imply fewer costs for the health system. However, this hasn't been proved in Colombia. We aimed to assess the cost-effectiveness of the PVP compared to the monopolar transurethral resection of the prostate (RTUP-M) for the treatment of lower urinary tract symptoms (LUTS) due to BPH from the perspective of a third-party payer in Colombia in 2016.

Materials and Methods: We used the 24-month results of a randomized clinical trial comparing PVP versus RTUP-M to estimate surgical outcomes, complications, re-operation and re-intervention rates. We designed a Markov model comprising four health states following treatment with either PVP or RTUP-M to estimate expected costs and outcomes: asymptomatic, pharmacologic treatment, re-operation and re-intervention. Time horizon was defined at 2 years with four 6-month cycles. Transition probabilities were drawn. Resource use estimation involved a random selection of clinical records from a local institution, which were validated by four urology experts. Unit costs were obtained from official Colombian charges (January, 2017). A 5% discount rate was applied to all parameters and threshold was defined at 3-times Colombian GDP *per capita*. Uncertainty was analyzed with deterministic and probabilistic models using a Montecarlo simulation.

Results: Patients undergoing PVP gained 1.79 QALYs compared to 1.57 QALYs with RTUP-M. Costs were 7921 USD and 8804 USD for RTUP-M and PVP, respectively. Incremental cost-effectiveness ratio was 3983 USD per QALY, thus favoring PVP as a cost-effective alternative in our context.

Conclusions: In Colombia, with current prices, PVP is cost-effective when compared to RTUP-M for LUTS due to BPH for a 2-year time horizon.

MP-01.13

Readmission Following Transurethral Prostatectomy for Treatment of Benign Prostate Hyperplasia in the Post TURP Era; Does the Technique Differ?

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Introduction and Objective: Despite being frequently described as the gold standard treatment of benign prostate hyperplasia (BPH), transurethral resection of the prostate (TURP) has been recently challenged by other techniques as endoscopic enucleation, vaporization and incision of the prostate. Furthermore, TURP itself has been evolved by introduction of TURP in saline. The aim of our study was to determine independent predictors for procedure-related readmission (PRR) following transurethral interventions for BPH in a contemporary series.

Materials and Methods: The electronic files of our PIS were reviewed for all transurethral BPH interventions that were performed between 2005 and 2014. Patients with at least one depictable follow up were included. Files were reviewed for all perioperative and follow up data. PRR was reviewed for cause, management and time to primary intervention with assessment of readmission free survival (RFS) among different groups.

Results: Out of 3423 reviewed procedures 3020 were included for analysis. PRR was 262 (8.7%), 38 (1.3%) and 10 (0.3%) once, twice and three times following primary intervention respectively. Causes of PRR and their management were summarized in table 1. Mean RFS (95%CI) was 102 (95:109), 117 (111:122), 73 (70:76) and 46.7 (44.7:48) months following incision, resection, enucleation and vaporization (P0.016) respectively. Regardless energy used, on Cox regression analysis, RFS was independently predicted by surgical technique (HR 1.36, 95%CI 1.5:1.7, P0.02) and level of surgeon`s experience (HR 1.37, 95%CI 1.07:1.7, P0.01). The least depictable follow-up was 20 months. For prostate size less than 40ml; 20-month RFS was 97%, 89%, 93% and 87% following incision, resection, enucleation and vaporization (P0.01) respectively. Among cases with prostate size from 40 to 80ml; 20-month RFS was 80%, 97%, 95% and 89.8% following incision, resection, enucleation and vaporization (P0.02) respectively. Among cases with prostate size

more than 80ml; 20-month RFS was 85%, 95% and 84% following resection, enucleation and vaporization (P0.04) respectively.

Conclusion: Regardless the kind of energy used, surgical technique dictates the need for readmission. Prostate incision achieves the best RFS for small sized prostate. While prostate resection or enucleation accomplish comparable high RFS in moderate sized prostate. When treating large sized prostate, least PRR seems to be with enucleation.

MP-01.14

Holmium Laser Enucleation of Prostate: Does Prostatic Size Matters?

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Introduction and Objectives: Holmium laser enucleation of the prostate (HoLEP) has been cited as a size independent surgical technique. Few clinical studies had already reported results with large prostates; however the samples were usually small. Our objective was to report the efficacy and safety of HoLEP in large prostates (≥80cc) in a highvolume referral center.

Materials and Methods: From April 2014 to April 2016, 563 patients with lower urinary tract symptoms suggestive of benign prostatic obstruction underwent HoLEP in a highvolume referral center. Clinical data were prospectively collected before and after procedure with followup visits scheduled at 1, 3, 6 and 12 months (M). Retrospective analysis of the collected data was performed with the aim of comparing the results of patients with prostatic size <80 cc and ≥80cc.

Results: A total of 234 patients (41.6%) had prostate volume ≥80cc. Preoperative characteristics of the patients (<80cc vs ≥80cc) did not differ in terms of age (69.2 vs 70.8 Years, p=0.39) and BMI (25.9 vs 26.9 Kg/m2, p=0.13). The mean prostate volume was 53.6 vs. 113.6cc, but the mean IPSS initial score was similar in both groups (19.4 vs 18.4) with 85.5% vs 88.2% referring high impact in their quality of life (QoL). The mean initial Qmax and the Post Void Residual (PVR) were not statistically different between two groups (Qmax = 10.5 vs 9.3 mL/s; PVR= 125.1 vs 170.8cc). The mean operative time was less in the group of small prostates (78.3 vs 106.9 minutes, p<0.0001) but the rate of intraoperative complications was similar in both groups (4.5% vs 4.9%). Conversion to open surgery was needed just in 1 case because of important bleeding and to remove big prostatic lobes in the group of patients with prostate ≥80cc. The mean of hospital stay (2.1 vs 1.7 days p=0.289) and the mean catheterization time (35.3 vs. 33.2 hours, p=0,286) were similar. According to the ClavienDindo classification, postoperative complications were 19.7% in the group of prostates <80cc: Grade II 11.9%, Grade IIIa 0.9% (3 cases of bladder clots removal under general anesthesia). Postoperative complications were 20.3% in the group of prostates ≥80cc: Grade II 9.7% and Grade IIIa 0.4% (1 case of bladder clots removal under general anesthesia). There was a major improvement of urinary symptoms at followup in both groups, with a tendency towards better improvement of the IPSS score in the group of patients with ≥80cc (table 1). At followup, 2 patients with prostate <80cc and 3 patients with prostate ≥80cc were operated for bladder neck contracture. Urinary artificial sphincter was placed in 1 patient with prostate ≥80cc because of persistent urinary incontinence.

Conclusions: In this large retrospective study, HoLEP proved to be a safe surgical procedure independent of prostatic size. In patients with large prostates, we observed low rate of major complications and good objective and subjective functional outcomes with a tendency towards better improvement of IPSS. These results are confirming HoLEP is a valid surgical option for patients with large prostates.

MP-01.13, Table 1.

Surgical technique				Incision	Resection	Enucleation	Vaporization
Number of procedures				172	2293	424	131
Cause of PRR	**1st PRR**	**2nd PRR**	**3rd PRR**				
Secondary bleeding	54	8	4	0	46	7	1
Infectious complications	6	1	-	0	6	0	0
• Uro-sepsis	3	-	-	0	3	0	0
• Complicated Epididymo-orchitis (scrotal abscess)	3	1	-	0	3	0	1
Urine Incontinence	20	13	2	0	12	6	2
Residual/ regrown adenoma	117	4	-	16	85	11	5
Bladder neck contracture	30	5	3	3	24	2	1
Urethral stricture	35	7	1	3	28	4	0
Overall	262	38	10	22	201	48	10
90-days PRR				4	55	15	4
Delayed PRR				18	146	15	5

PRR: Procedure related readmission

MP-01.14, Table 1. Objective and Subjective Outcomes during Follow-Up

Time	Qmax (ml/s)			IPSS			PVR (cc)			QoL (% Non satisfaction)		
	<80cc	≥80cc	p-val.	<80cc	≥ 80cc	p-val.	<80cc	≥80cc	p-val.	<80cc	≥80cc	p-val.
Preoperative	10,5	9,3	0,154	19,3	18,4	0,233	125	170	0,074	85,5	88,2	0,600
Month 1	24,6	21,8	0,538	10,5	10,3	0,898	8	24	0,149	31,6	22,2	0,542
Month 3	22,3	24,8	0,277	7,4	4,95	0,004	9	21	0,156	15,2	10,2	0,464
Month 6	21,6	24,9	0,266	7,1	4,8	0,033	15	11	0,674	15,5	5,6	0,211
Month 12	23,6	26,5	0,338	5,4	2,5	<0,0001	20	13	0,552	8,8	5,9	0,716

MP-01.15

Comparison of Postoperative Outcomes According to Intravesical Prostatic Protrusion in Patients with Benign Prostatic Hyperplasia who Underwent Holmium Laser Enucleation of the Prostate

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Introduction and Objective: Intravesical prostatic protrusion (IPP) is useful factor for predicting clinical progression of benign prostatic hyperplasia (BPH). We attempted to analyze whether IPP affects the postoperative outcomes of holmium laser enucleation of the prostate (HoLEP).

Materials and Methods: From January 2012 to December 2015, 94 patients with a possible measurement of IPP and follow-up period of at least 6 months were enrolled. IPP was measured by transrectal ultrasonography (TRUS). We divided the patients into two groups on the basis of the degree of IPP: the insignificant IPP group (group A, IPP <10 mm) and the significant IPP group (group B, IPP ≥10 mm). Surgical outcomes were analyzed at 3 months and late complications were analyzed at 6 months after HoLEP. Patient's characteristics and surgical outcomes were retrospectively compared between the two groups.

Results: Thirty nine patients presented with significant IPP (41.5%). Patient's characteristics were not significantly different between the two groups except for preoperative International Prostate Symptom Score (IPSS)-storage and Quality of life score (QoL). Preoperative IPSS-storage and QoL was significantly higher in the group B (p = 0.023, 0.029, respectively). Postoperative improvement in IPSS-storage, IPSS-voiding, and QoL were higher in the group B (p=0.001, 0.011, 0.002, respectively).

Conclusion: IPP is an independent factor for predicting postoperative outcomes in BPH patients who undergo HoLEP. We can expect better postoperative outcomes in patients with significant IPP (IPP ≥10 mm).

Moderated ePosters Session 2 Stones I

Friday, October 20
1415–1545

MP-02.01

How Can We Prevent Stone Formation in Rats witch Were Ethylene Glycol Induced Nephrolithiasis

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Introduction and Objective: Urolithiasis is the third prevalent chronic disorder of the urinary system. Herbal plants are used worldwide and there is an increasing interest in research in this field to provide a scientific basis for their beneficial effects. This study investigated the protective effect of the novel syrup formulation of achillea mille folium against ethylene glycol induced urolithiasis.

Materials and Methods: Thirty-six male wistar rats were randomly divided in six groups. Group A served as a control and received regular rat food and drinking water ad libitum ethylene glycol 1% in drinking water was fed into group B To F will be used to induce nephrolithiatic in rats till 28th days. Group C (curative group) received an ethalonic extract of achellea (200 mg/Kg b wt) and Group D (curative group) received aqueous extract of Achellea (200mg/kg b wt) from the15th day till 28th day. Group E and F (preventive group) were received suspansion 1 (200 mg/kg b wt) and suspension 2 (200mg/kg b wt) from first to 28th day, respectively both formulation were given once daily by oral route. After 28 days, various biochemical parameters were measured in urine and serum; kidneys were also subjected to histopathological analysis.

Results: Urinary calcium, oxalate and phosphate secretion increased in group B (P<0.001) where as yarrow syrup prevented these urinary elements changes in group C-F (P<0.05). Significant reductions in urinary citrate secretion were prevented starting yarrow syrup (P<001). There was an obvious decrease in urinary oxalate and increase in citrate (Group F p<001). Renal pathology reports showed: oxalate crystals sediments, followed by ethylene glycol induced stone formation wich were reduced in number and size following yarrow syrup consumption.

Conclusions: The presented data indicate that administration of both Achillea formulations against rats with ethylene glycol induced lithiases, reduced and prevented the growth of urinary stones. It seems that antioxidant and anti free radical aggregation effects of yarrow syrup might prevent new stone formation and growth.

MP-02.02

Differences in 24-Hour Urine Composition between Stone-Formers and Non-Stone Formers in China

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Introduction and Objective: Analysis of 24-hour urine composition is considered of clinical value for identification of risk factors for formation and recurrence of urinary stones. There are nearly no reports on 24-hour urine composition in Chinese stone-formers and non-stone formers.

Materials and Methods: We retrospectively reviewed 24-hour urine data in samples collected between March 2010and July 2016by adult stone-forming patients (SF) and non-stone forming subjects (N). The data comprised information on age, gender and 24-hour urine compositions AP(CaOx) index, AP(-CaOx) indexs and AP(CaP) indexs were calculated.

Results: Data from1398 individuals (758 SF and 640 N) were included in the study. Urine volume, oxalate, urate, AP (CaOx) index, and AP (CaOx) indexs were higher in SF than in N (p<0.05), while urinary magnesium and citrate were lower (p<0.05). Such differences were recorded in both genders. Urinary excretion of calcium was significantly lower in male SF compared with N, a finding that was different from that in women. AP (CaP) indexs was significantly higher in global and female SF than that in N (p<0.05).

Conclusion: There were marked differences in 24-hour urine compositions between SF and N subjects. For prevention of stone formation and recurrence, increased intake of water at reasonable levels might be insufficient to counteract stone formation. For Chinese SF patients, reduce urine oxalate might be more important than that of calcium.

MP-02.03

Differences of Metabolic Evaluation in 24-Hour Urine between Pre and Postmenopausal Non-Stone Former Women

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Introduction and Objective: To estimate the differences in 24-hour urine compositions associated with urolithiasis between pre- and postmenopausal females who were not stone formers.

Materials and Methods: The 24-hour urine samples of female volunteers without urolithiasis were collected from May 2013 to July 2014 during an epidemiology study of urolithiasis among adults aged 18 and older in China. Subjects were excluded from this study if they met the following criteria: incomplete urine samples(urine creatinine<600μg/24h), serum creatinine >133μmol/L, had urinary stone currently and previously, urinary tract infection, gout, hyperthyroidism, malignancy, had a history of enterectomy, had taken medications of thiazide, allopurinol, vitamin supplements, potassium citrate or calcium supplements during the past two weeks. The compositions associated with urinary stone in 24-hour urine were measured and compared between pre-and postmenopausal women.

Results: A total of 603 female participants provided their 24-hour samples to analyze. And 354 women with an average age of 52.5±14.03 (19-84) years met our criteria, included 160 premenopausal women and 194 postmenopausal women. Compared to premenopausal women, postmenopausal women had a lower secretion of citrate (p=0.043), magnesium (p=0.001), and creatinine (p=0.001) in 24-hour urine. Multivariate linear regression analysis showed that the status of menopause was associated with the differences of magnesium (p=0.003) and creatinine (p=0.002) secretion, but was not associated with difference of citrate (p=0.402) secretion.

Conclusion: Postmenopausal females had a significant lower secretion of magnesium in 24-hour urine than premenopausal females. It may be associated with an increased risk of urolithiasis after menopause among women.

MP-02.04

Establishment of Reference Values for Stone Risk Factors in 24-Hour Urine among Healthy Adult Han Population across China

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Introduction and Objective: To establish the reference intervals of stones risk factors in 24-hour urine for healthy Chinese Han population.

Materials and Methods: From May 2013 to July 2014, we collected 24-hour urine samples of Han adult volunteers during a cross-sectional study of urolithiasis across China. Volunteers were excluded if they had urinary stone, hypertension, diabetes mellitus, gout, hyperparathyroidism, had a history of enterectomy, with serum creatinine >133 umol/L and incomplete urine collections. All 24-hour urine samples were analyzed in our hospital, and the standard protocol included volume, pH value, oxalate, citrate, sodium, potassium, chloride, calcium, phosphate, creatinine, uric acid, magnesium, the ion activity products of calcium oxalate(AP(CaOx) indexs) and calcium phosphate (AP(CaP) indexs). We calculated the reference ranges according to the Clinical and Laboratory Standards Institute (CLSI) 2008 guidelines. And we compared these reference intervals with EAU guideline 2015.

Results: A total of 1057 volunteers provided their 24-hour urine samples to analyze, and 802 cases were excluded based on these criteria. A total of 255 subjects with an average age of 52.39±15.15 (19-89) years old met our criteria and were eligible in the final analysis, included 132 men and 123 women. The median and reference intervals for creatinine, calcium, oxalate, citrate, uric acid, magnesium, and phosphorus of the present study population were showed in Table 1, with comparisons to reference ranges and limits for medical attention of EAU guideline 2015. The overall abnormal rate of calcium, oxalate, citrate, magnesium, and phosphorus in 24-hour urine was 26.27%,

MP-02.04, Table 1. Medians and Reference Intervals for 24-Hour Urine Stone Risk Among Healthy Adult Han Population in China: Compared to Reference Ranges of European Associated of Urology (EAU) Guideline

Characteristic	Median (reference intervals), present study	Reference ranges and limits for medical attention of EAU guideline	Abnormal rate when compared to EAU guideline, %(n/N)
Creatinine, mmol/24h[a]			
Men	11.28 (7.20, 21.79)	13-18	74.24(98/132)
Women	8.10 (5.52, 13.30)	7-13	22.76(28/123)
Overall	9.24 (5.68, 17.96)		
Calcium, mmol/24h[b]			
Overall	3.85 (≤8.25)	> 5.0	26.27(67/255)
Men	4.09 (≤ 9.00)		
Women	3.62 (≤7.51)		
Oxalate, mmol/24h[b]			
Overall	0.21 (≤ 0.59)	> 0.5	7.06(18/255)
Men	0.22 (≤0.58)		
Women	0.21 (≤0.59)		
Citrate, mmol/24h[c]			
Overall	1.89 (≥0.21)	< 2.5	68.24(174/255)
Men	1.50 (≥0.21)		
Women	2.31 (≥0.25)		
Uric acid, mmol/24h[b]			
Overall	3.01 (≤6.35)		
Men	3.18 (≤5.76)	>5.0	8.33(11/132)
Women	2.84 (≤ 5.41)	> 4.0	8.13(10/123)
Magnesium, mmol/24h[c]			
Overall	3.32 (≥1.14)	< 3.0	45.88(117/255)
Men	2.98 (≥1.41)		
Women	3.54 (≥0.90)		
Phosphorus, mmol/24h[b]			
Overall	15.56 (≤31.24)	> 35	0.08(2/254)
Men	16.43 (≤31.60)		
Women	14.46 (≤31.24)		

[a]Presented with 95% reference intervals. [b]Presented with an upper limit which was the 97.5th percentile. [c]Presented with a lower limit which was the 2.5th percentile.

MP-02.04, Table 2. Medians And 95% Reference Intervals for 24-Hour Urine Stone Risk Among Healthy Adult Han Population in China

Characteristic	Median (reference intervals), present study
pH[a]	
Overall	6.22 (5.24, 7.63)
Men	6.18 (5.23, 7.23)
Women	6.29 (5.32, 8.16)
Chloride, mmol/24h[a]	
Overall	153.10 (70.0, 353.60)
Men	141.00 (55.20, 304.80)
Women	162.80 (74.40, 962.52)
Sodium, mmol/24h[a]	
Overall	157.36 (69.81, 396.80)
Men	144.47 (67.31, 289.49)
Women	166.53 (72.00, 396.84)
Potassium, mmol/24h[a]	
Overall	40.20 (15.40, 90.09)
Men	33.93 (15.23, 91.84)
Women	37.50 (19.42, 82.40)
Volume, ml/24h[a]	
Overall	1330.00 (600.00, 2840.00)
Men	1330.00 (630.00, 3140.00)
Women	1310.00 (600.00, 2660.00)
AP (CaOx) Indexs[a]	
Overall	0.64 (0.09, 2.11)
Men	0.72 (0.15, 2.44)
Women	0.57 (0.09, 2.11)
AP (CaP) Indexs[a]	
Overall	21.81 (4.94, 75.69)
Men	24.54 (4.58, 84.05)
Women	17.61 (5.02, 53.67)

[a]Presented with 95% reference intervals.

7.06%, 68.24%, 45.88%, and 0.08% respectively when compared with EAU guideline 2015. And the abnormal rate of creatinine was 73.48% in men and 22.76% in women, while the abnormal rate of uric acid was 8.33% in men and 8.13% in women.

The 95% reference intervals of pH values, chloride, sodium, potassium, volume, AP (CaOx) Indexs, and AP (CaP) Indexs were showed in Table 2.

Conclusion: Healthy adult Han population in China has lower secretion of creatinine, calcium, citrate, and magnesium when compared with EAU guideline 2015. And they should have their own reference intervals of stone risk factors in 24-hour urine.

MP-02.05

A Multi-Centre Cohort Study Evaluating the Role of Inflammatory Markers in Patient's Presenting with Acute Ureteric Colic (MIMIC)

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Introduction and Objective: There is conflicting evidence on the role of raised inflammatory markers in acute ureteric colic and spontaneous stone passage, particularly in patients managed conservatively and whether White Cell Count (WBC) on admission can predict stone passage. If so, it could be used to guide management in these patients. MIMIC aims to assess whether (WBC) at acute ureteric colic presentation is associated with likelihood of spontaneous stone passage.

Materials and Methods: Design: Multi-centre cohort study in 71 centres disseminated via the UK British Urology Researchers in Surgical Training (BURST). Primary Outcome: Spontaneous stone passage (SSP).

Inclusion criteria: Acute renal colic with CT-KUB confirmed ureteric stone. Follow up: 6 months. Statistical Analysis: Multivariate logistic regression was performed including: WBC, Neutrophils, CRP, Creatinine, Stone size, Stone position, Hydronephrosis, NSAID use, Medically Expulsive Therapy (MET) use, Antibiotic use.

Results: Data was collected from 4181 patients. 75% (n=3127) were discharged with conservative management. 80% (n=2516) had confirmed outcomes and were included in the multivariate analysis. Overall SSP rate of this cohort was 74% (n=1863). Multiple factors were significant on univariate analysis but after adjusting for confounding variables in multivariate analysis, the strongest predictors of SSP were stone size (OR 0.57 [95% CI 0.53-0.61], p=0.00001) and position (OR 3.31 [95% CI 2.60-4.22], p=0.00001). WBC was not significantly associated with SSP on univariate or multivariate analysis (adjusted OR 0.99 [95% CI 0.99-1.00], p=0.527). For every increase in stone size by 1mm, odds of SSP decreased by 43%. Stone clearance rate for stones measuring 0-5mm was 84% versus 42% for stones measuring 6mm or greater. Compared to proximal ureteric stones, distal ureteric stones had a three times greater odds of SSP. Stone clearance rate was 51% for proximal ureteric stones, 69% for mid-ureteric stones and 83% for lower/distal ureteric stones.

Conclusion: To our knowledge MIMIC is the largest contemporary cohort assessing outcomes from acute ureteric colic. Our data shows that for acute ureteric colic patients who are suitable for initial conservative management, WBC alone should not be used to influence decisions on whether to discharge or perform intervention. However, stone size and position should inform clinical decisions.

MP-02.06

Complications of Temporary Urinary Diversion Using Nephrostomy Tube or Double J Ureteric Stent in Pregnant Women with Symptomatic Urolithiasis

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Introduction and Objective: Symptomatic urolithiasis is one of the most important causes of abdominal pain during pregnancy. In some situations it is better to do temporary treatment and postpone the surgical procedures. Here in, we report the complications of temporary urinary diversion including double j stent (DJ stent) and percutaneous nephrostomy tube (PCN) causing hospitalization of pregnant women.

Materials and Methods: In this cohort sudy, from August 2013 to September 2016, twenty three pregnant women with urolithiasis were referred to our center in which temporary urinary Diversion was done. The reasons for temporary urinary diversion with Dj Stent or PCN were Febrile UTI and Presentation in the first trimester. The patient's mean age was 27.1 ± 4.8 (20-37 years) and most of them (69.5%) presented in the first trimester. All the procedures were done under guide of Ultrasound with local anesthesia. All the patients were followed routinely in Urology and Gynecology& Obstetrics clinic.

Results: We inserted PCN tube in twelve (52.1%) and Dj stent in eleven patients (47.8 %). Mean age of the patients were 27.5 ± 5.4 in PCN group and 26.7 ± 4.3 in Dj stent group (P=0.710). Of these , Seven patients (30.4%)developed complications including febrile UTI (16.7 % of PCN Group and 9.1 % of Dj stent Group) and bothersome stent related syndrome (36.4 % of Dj Stent Group).The occurrence of complications were not significantly different between the two groups (16.7% in PCN Group vs. 45.5% in Dj stent Group, P=0.193). These patients admitted in the ward and after stabilization surgical treatment using ureteroscopy were done. Surgical treatments were done in the second trimester when is the safest time for doing operation. All the patients completed their pregnancy until full term without any serious obstetric complications.

Conclusion: Temporary urinary diversion using double j stent or percutaneous nephrostomy tube can be associated with some potential complications which can threaten the mother and her fetus. In these situations we advise to do temporary management till 2nd trimester when the surgical procedure is safe.

MP-02.07

The Ascent of Ureteroscopy and the Descent of Lithotripsy: Trends of Stone Disease Over Last 20 Years

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Introduction and Objective: Numerous studies have reported on regional or national trends of stone disease intervention. However, no paper has yet examined the global trend of stone disease treatment. We aimed to complete this examination.

Materials and Methods: A systematic review of papers from 2004 to August 2016 for all English language articles reporting on trends of stone disease intervention was performed by 2 reviewers independently. Authors were contacted in the case of data not being exact. If the author did not reply, data was estimated from graphs. Data was examined using SPSS version 24. Trends were analysed using linear regression.

Results: The systematic review yielded 120 papers, of which 8 were included in the review. 5 papers had numerical data available and a further 3 had only percentage of total treatment. Overall there were 6 countries with available data: UK, USA, New Zealand, Australia, Canada and Brazil. There was significant linear regression between share of total treatments and year for ureteroscopy (b=0.45, R2=0.20, p<0.001). Lithotripsy demonstrated non-significant trends.

Conclusions: The share of total treatment for urolithiasis across the published literature has significantly increased for ureteroscopy whilst lithotripsy demonstrated a non-significant decline.

MP-02.08

The Demise of Shockwave Lithotripsy: Australian Trends in Urolithiasis Treatment

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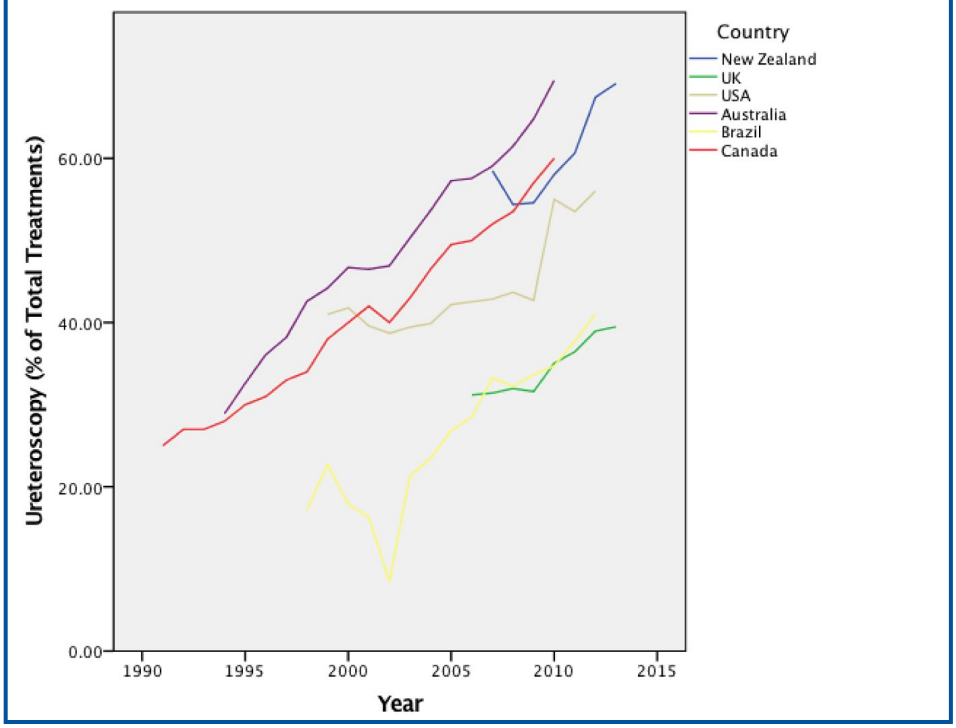
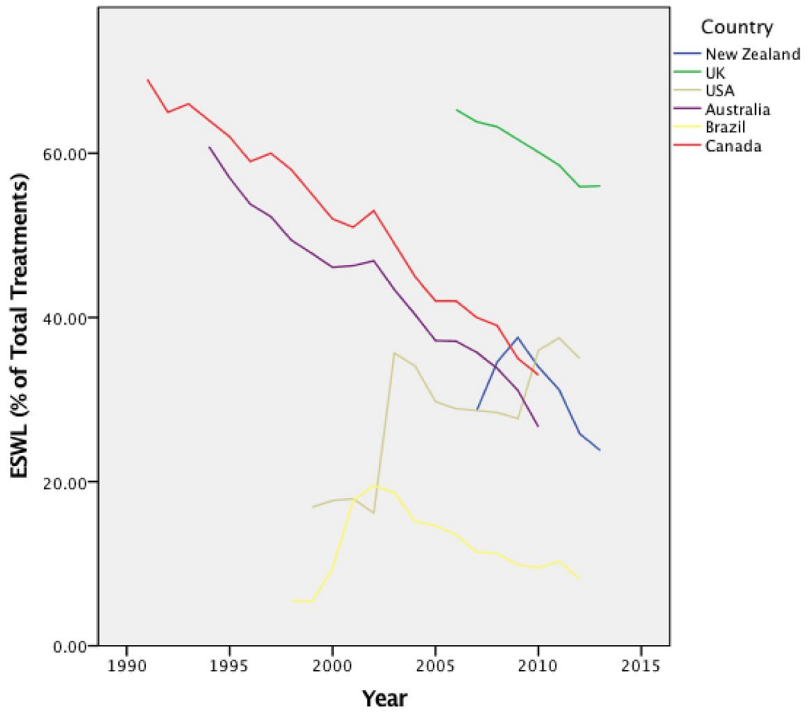
Introduction and Objectives: Significant advances in ureteroscopy and stone fragmentation energy sources have resulted in a paradigm shift in urolithiasis management. We aimed to assess the current state

MP-02.07, Figure 1.



MP-02.07, Figure 2.



of urolithiasis management in Australia over the last 15 years using population-based data.

Materials and Methods: Medicare Australia databases were accessed and Medicare rebate codes pertaining to pyeloscopy, extra-corporeal shockwave lithotripsy (ESWL) and percutaneous nephrolithotomy (PCNL) were extracted per state, year and gende between 2001 and 2015. Population data was extracted from the Australian Bureau of Statistics website and provided the "population at risk" denominator to calculate incidence proportions.

Results: From January 2001 to December 2015, 50,239 pyeloscopy procedures for stone extraction in adult patients were performed in Australia. During the same period, 48,209 ESWL and 6,956 PCNL procedures were performed. Pyeloscopy procedures have been increasing by an average of 26% year-on-year, population adjusted, while ESWL has decreased by 3.6% and PCNL by 6.5% every year over the same period. In absolute terms, scope procedures have increased yearly by an average of 3.9 per 100,000 of population (95% CI: 3.2 to 4.5) whilst ESWL has changed by -0.77 (95% CI: -0.88 to -0.65) and PCNL by -0.16 (95% CI: -0.17 to -0.14).

Conclusion: Over the past 15 years in Australia, the total number of stone treatment procedures has increased significantly. Considerable increases in ureteroscopy were observed with relative and absolute reductions in ESWL and PCNL. Regional variations in urolithiasis management strategies highlight the need for consensus on stone treatments within Australia.

MP-02.09

Emergency Extracorporeal Shock Wave Lithotripsy for Upper Ureteric Stones with or without Pre-Stenting: A Randomized Clinical Trial

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Introduction and Objective: Extracorpreal Shock Wave Lithotripsy (ESWL) is an attractive non-invasive therapeutic modality for urolithiasis typically reserved for elective cases in a controlled setting. Proceeding directly to ESWL without pre-stenting in patients presenting to the emergency room with acute renal colic secondary to upper ureteric calculi can spare patients multiple anesthesia-requiring procedures. In this study, we aim to compare upper ureteric stone clearance with and without pre-stenting in patients undergoing ESWL within 48 hours of their initial presentation.

Materials and Methods: Between July 2012 and July 2015, 124 patients who had presented to emergency with renal colic secondary to upper ureteric calculi were recruited for this study. Criteria for exclusion, included patients with abnormally elevated renal parameters, signs of a concomitant infectious process (fever, leukocytosis, or a positive urine dipstick), pain poorly responding to analgesia, radiolucent stones, or stones smaller than 4-mm or larger than 15-mm in size. Seventy-two patients had been randomly assigned to undergo ESWL directly without pre-stenting (Group A), while 52 patients were assigned for pre-stenting (Group B), with their data and outcomes prospectively collected. Mean patient BMI in both groups was 26.1 and 26.7 kg/m2 (p = 0.49), mean skin-to-stone distance was 11 and 10.1 cm (p = 0.03), mean stone size was 7.3 and 7.8 mm (p = 0.114), and mean stone density was 902 and 1078 Hounsfield units (p = 0.005) respectively.

Results: All 124 patients had undergone their first session of ESWL within 48 hours of their initial presentation. 8 patients were lost to follow up in Group A, while one patient was lost to follow up in Group B. Four patients' stones in Group B had migrated to the kidney with stenting and were excluded from the study. Stone clearance in both groups was 61% and 44% (p = 0. 068) after one session, 91% vs 59% (p = < 0. 001) by the second session, and 95% and 73% (p = 0. 001) by the third and final session. No patients in Group A crossed over to Group B or required stenting at any point before their last session.

Conclusions: Emergency ESWL for upper ureteric calculi offers excellent stone clearance outcomes for properly selected patients with an acute presentation of renal colic that has subsided. Proceeding directly for ESWL without pre-stenting was associated with significantly enhanced stone clearance while sparing the patient multiple invasive interventions and their potential morbidity.

MP-02.10

The Efficacy and Safety of And Satisfaction with the Transgluteal Approach to Extracorporeal Shockwave Lithotripsy via the Supine Position to Treat Distal Ureter Stones: A Prospective, Randomized, and Multicenter Study

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Introduction and Objectives: We compared the outcomes of ESWL to treat distal ureter stones with regard to the conventional prone and supine positions using the transgluteal approach through the greater sciatic foramen.

Materials and Methods: A prospective, randomized, single-blind, and multicenter study was conducted between October 2014 and July 2015. The inclusion criteria were radio-opaque distal ureter stones with a maximum diameter of 0.5-2 cm as measured on a computed tomography (CT) scan. The included 160 patients were treated using the PiezoLith 3000. The patients were randomly assigned to 2 groups: the prone group (n=80; treated in the conventional prone position) and the transgluteal group (n=80; treated in the supine position using a transgluteal approach). In the latter group, the focused shock wave was transmitted through the greater sciatic foramen with the head positioned at a 40° angle to the vertical. Treatment outcomes were assessed using KUB at 2 weeks after treatment. "Stone-free" was defined as the complete clearance of stone fragments. Overall satisfaction was self-reported using a 0-to-5 Likert scale.

Results: The mean patient age was 43.2±11.9 years, and the mean stone size was 5.16±1.87 mm. No differences were found in the baseline characteristics of either the patients or the stones. The overall efficacy was 66.9%. The stone-free rate was significantly higher in the transgluteal group (72.6%) than in the

MP-02.11, Table 1. The Different Treatment Options for Ureteral Lithiasis

Treatment	Stone location		Mean stone size (mm)		P value	Mean stenting time (days)	Stone free rate (1 month after treatment)	Efficiency quotient (EQ)
	Lumbar	Pelvic	Lumbar	Pelvic				
Stent Removal	36	57	9.55	7.19	0.007	75	92.3%	82.3%
ESWL	39	4	11.88	8.33	0.043	127	76.8%	51.8%
URS	32	29	10.17	10.20	0.977	135	95.6%	87.6%
Total	107	90						

ESWL - extra corporeal shock wave lithotripsy; URS - ureterorenoscopy

MP-02.12, Table 1. Location and Spontaneous Stone Passage in Early and Delayed Ureteral Stenting Groups

		Wait for ureteral double J stenting		P value
		< 2.5 days	> 2.5 days	
Location	Lumbar	16 (76.2%)	9 (42.9%)	0.028
	Pelvic	5 (23.8%)	12 (57.1%)	
SSP	Yes	13 (61.9%)	9 (42.9%)	0.226
	No	8 (38.1%)	12 (57.1%)	

Chi-Square Test, P Value With 95% Confidence Interval.

prone group (54.7%; odds ratio 2.413, 95% CIs 1.010-5.761, P=0.023). No serious adverse events were observed due to treatment in either group. The satisfaction score of the transgluteal group was 4.21±0.81, and 83.6% were willing to repeat the same procedure if necessary.

Conclusions: ESWL using the transgluteal approach via the supine position through the greater sciatic foramen was more effective than via the conventional prone position. Furthermore, this approach provided a comparably safe and satisfactory procedure.

MP-02.11

Predicting the Success of Retrograde Stenting for Managing Ureteral Lithiasis

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Introduction and Objectives: Ureteral calculi are a common urological problem often requiring surgical intervention. Since stent placement causes passive ureteral dilation, we hypothesized that temporary placement of a ureteral catheter would facilitate spontaneous stone passage (SSP).

Materials and Methods: Retrospective review of patients admitted to the emergency department of our institution with ureteral calculi and renal colic with difficult analgesic control, between 2011 and 2015. All patients underwent retrograde ureteral stent placement and had a minimum follow up of six months.

We evaluated the perioperative data and the different treatment options after ureteric stenting. Univariate and multivariate analysis were performed to identify predictors of successful SPP and the efficiency quocient (EQ) in different treatment options.

Results: A total of 197 patients were enrolled - mean age: 54 (20-90); 101 males.The mean length of hospital stay was 6.5 days (1-30) and the mean stone size was 10mm (3-30). SSP occurred in 46.7% of all patients, and there was difference in stone passage between lumbar and pelvic stones (32.7% vs 63.3%, p= 0.005). In multivariate regression we found that SSP was correlated to male sex (p=0.041) and pelvic stone location (p=0.004) but not with age (p=0.493). We observed increased stenting time until final treatment, due to lack of operating rooms available in our department. The ESWL was the less efficient followed by stent removal and URS. In 41 patients treated with ESWL, 56 sessions were needed.

Conclusion: We found that ureteral stent placement could be an effective method of treating small symptomatic ureteral stones, mainly in male patients and distal calculi. If there is no SSP, URS might be the best treatment option followed by ESWL.

MP-02.12

Efficiency of Early Ureteric Stenting for Urosepsis Associated with Urinary Tract Calculi

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Introduction and Objectives: Patients with complicated urosepsis associated with urinary tract calculi commonly require ureteric stent placement to restore and drain the infected urinary tract. Earlier placement may lead to a lower incidence of serious morbidity. It also leads to a shorter length of hospital stay, although this issue has not yet been well evaluated in the literature.

Materials and Methods: Retrospective review of patients admitted to our institution between 2011 and 2015 with the diagnosis of urosepsis associated with urinary tract calculi, having ureteral stent placement. Early and delayed stenting groups were defined by the median waiting for ureteral stent placement. The primary outcomes were length of hospital stay (LOS) and spontaneous stone passage (SSP) after stent placement. Statistical analysis included chi-square test, linear regression and Spearman correlation.

Results: A total of 42 patients (mean age: 58; 32 females) had a mean number of 3.38 (1-8) days since emergency room admission to ureteral stenting. The median wait to ureter stenting was 2.5 days. The overall mean length of hospital stay was 12.2 (5-36) days. The early stenting group (mean LOS 5.6 days) had a significantly shorter LOS than the delayed stenting group (mean LOS 18.8 days). The adjusted beta coefficient was -13 days (95% confidence interval: -17, -9). The early stenting group had predominantly lumbar calculi compared to the delayed stenting group (76.2% vs 42.8%; p=0.029). The early stenting group had improved SSP compared to the delayed group (61.9% vs 47.6, %; p=0.268). If we consider the lumbar calculi only, there is a relation in SSP between early and delayed stenting groups (p=0.027).

Conclusions: There is a significant reduction of LOS in patients with urosepsis associated with urinary tract lithiasis when early ureteral stenting is performed (<2.5 days). We observed a trend of improved stone passage in the early stenting group with significance in lumbar calculi between the two groups.

MP-02.13

Outcomes of Ureterorenoscopic Stone Treatment in 301 Patients with A Solitary Kidney

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Introduction and Objectives: To determine the stone-free rates (SFR) and intra- and postoperative complication rates and grades of ureterorenoscopic stone treatment in patients with a solitary kidney and to evaluate the influence of preoperative double J-stenting on outcomes in this cohort.

Materials and Methods: This study is a sub-analysis of the prospective international multicenter observational global CROES-URS study. Over a one-year period consecutive patients treated with ureterorenoscopy for urinary stones were included. Patients entered in this analysis were those with a solitary

functioning kidney. Descriptive data on patient characteristics, SFRs, complication rates and grades were evaluated for three separate groups: patients treated for ureteral stones, for renal stones or a combination hereof.

Results: Of the 301 included patients with a solitary functioning kidney, 219 were treated for ureteral stones, 57 for renal stones and 25 for both ureteral and renal stones. In the ureteral stone group, the SFR was 88.6% with an intra-operative complication rate of 7.4% and postoperative complication rate of 4.1%. In the renal stone group the SFR for stones ≤10 mm was 82%, the overall SFR was 56.4% with an intra-operative complication rate of 7.0% and postoperative complication rate of 10.5%. In the group with both ureteral and renal stones, the SFR was 60.0%, with an intra-operative complication rate of 12.0% and postoperative complication rate of 10.5%. Within the three groups, 72% of the postoperative complications were classified as Clavien I and II. There were no statistically significant differences in the patient characteristics and stone burdens between the renal stone patient groups with or without pre-operative double J stenting. The median operation time was 70 minutes for the group with preoperative double J-stenting and 55 minutes for the group without stenting (p=0.17). There were no significant differences in SFR, re-treatment rates, intra- and postoperative complications rates.

Conclusion: Ureterorenoscopy is an effective and safe modality to remove ureteral and renal stones in patients with a solitary kidney. Ureterorenoscopic stone removal was less effective for the treatment of larger renal stones or renal stones in combination with ureteral stones.

MP-02.14

Retrograde Ureteroscopic Treatment of Impacted Ureteral Stones: Predictors for Impaction and Treatment Outcomes

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Introduction and Objectives: Impacted ureteral stones are stones that remain at the same location for a prolonged time period causing local inflammation. The impeded stone exposure and lack of expansion space around the stone can make disintegration more difficult. The objective of this study was to describe stone-free rates (SFR) and complications of ureteroscopic treatment for impacted compared with non-impacted ureteral stones and to evaluate predictive variables for impaction.

Materials and Methods: The Clinical Research Office of the Endourological Society prospectively collected 1 year of consecutive data from 114 centers worldwide. Patients eligible for inclusion in this analysis were patients treated with ureteroscopy for ureteral stones. The presence of stone impaction was assessed endoscopically. Primary outcomes were SFRs and complication rates. Logistic regression analyses were conducted to explore predictive variables for stone impaction and to analyse the effect of impaction on outcomes.

Results: Of the 8543 included patients, 2650 (31%) had impacted and 5893 (69%) non-impacted ureteral stones. The overall SFR was 87% for impacted stones and 93% for non-impacted stones (p <0.001). Treatment of stones in the proximal ureter resulted in a SFR of 79% for impacted stones and 88% for non-impacted stones (p<0.001). Intra-operative complication rates were higher for impacted stones (7.9% versus 3.0%, p<0.001). Significantly higher ureteral perforation- and avulsion rates were reported in the impacted stone group compared with the non-impacted stone group. There were no statistically significant differences in postoperative Clavien-Dindo complication grades. In the multivariate logistic regression analysis, adjusting for confounders, impaction was associated with lower SFRs (OR 0.57, CI: 0.48-0.68, p<0.001) and higher intra-operative complication rates (OR 3.23, CI: 2.54-4.11, p<0.001) but not with higher post-operative complication rates (OR 1.34, CI: 0.95-1.90, p=0.095). Female gender, ASA- score >1, prior stone treatment, positive pre-operative urine culture, and larger stones were predictive variables for stone impaction.

Conclusions: Ureteroscopic treatment for impacted stones is associated with lower SFRs and higher intra-operative complication rates in comparison to non-impacted stones. The identified predictive variables may contribute to the identification of stone impaction and may aid the selection of the optimal treatment modality.

MP-02.15

A Four - Years Single Centre Experience in Ureteroscopy-Laser

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Introduction and Objectives: The motive behind undertaking this study was to scrutinize the safety profiles of the integration of Ureteroscopy Holmium Laser Lithotripsy to clear ureteral stones found in different localisations along the ureter. The profiles were considered to be a safer and minimally invasive procedure that could help urologists decide on the most appropriate treatment modality as well as streamlining the most suitable care for a given stone patient.

Materials and Methods: Starting November 2013 to February 2017, we retrospectively enrolled 85 patients (of which 50(58.82%) were men and 35 (41.18%) women, whose mean age was 44 years) with ureter stones at different localisations as imaged by the CT scan.

Results: Thirty one ureteral calculi were found in the right ureter, 52 in the left ureter and 02 were bilateral. The mean size of the stones was 16 mm and they were located at the distal ureter in 20 cases and proximal in the 75 remaining patients. Thirty two cases were impacted calculi. All cases were operated with a Semi Rigid Ureteroscope Holmium Laser. The 85 patients were successfully treated after a single endoscopic procedure. The mean operative time was 53 minutes. No major intraoperative complications were encountered. The minor complications included only self-limited postoperative fever and haematuria. No postoperative ureteral stricture transpired.39 (45.88%) patients were stented, ureteral catheters were left for drainage for 25 (29.41%) patients and 21 (24.70%) patients were left unstented. Both radiography and ultrasonography were performed at a follow-up visit in 4 weeks: No patient had evidence of residual stones.

Conclusion: The implementation of ureteroscopy as a first line therapy could lead to a noteworthy upsurge of the success rates and also would diminish serious complications that might hamper the clearing procedure. The obtained results were a significant indication that would discourage prescribing open surgery which is still adopted especially in the case impacted ureteral stones. Our data indicated that ureteroscopy is a safer and more effective modality in the treatment of stones at any localisation along the urinary tract.

MP-02.16

Ureteroscopic Lithotripsy without Anesthesia for the Old Patients in Septic Conditions or Severe Urinary Tract Infection

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Introduction and Objectives: Patients with underlying diseases, especially in old-aged, the urinary tract obstruction with the ureter stone would progress to severe conditions like renal failure or sepsis. Prompt removal of the stone via ureteroscope is necessary for these patients. However, most of them have poor general condition to endure regional or general anesthesia. So, we tried to implement the ureteroscopic removal of stone (URS) without anesthesia for the patients with ureter stone who were in septic shock conditions or severe urinary tract infections (UTI).

Materials and Methods: Thirty-four patients (16 males and 18 females) included this study and all of them had serious problems like sepsis, heart problems or lung problems which were difficult to endure anesthesia. Most of them were inserted pre-operative percutaneous nephrostomy catheter (PCN) due to impending septic shock. All of the stones were impacted in the ureter and URS were successfully performed with painkiller like pethidine 25mg IV. Success rate of stone removal, pain perception during operation using a visual analog pain scale were done.

Results: The mean age of the patients was 71.8 (±10.84). The position of the stones was as follows; 11 upper ureter, 6 mid-ureter and 17 lower ureter stones. And there was no patient that had to stop the operation because of intolerable pain. The mean of VAS (visual analogue pain scale) was 3.2 (±0.86). Overall success rate was 100%. However, 20% of cases were unable to find the impacted calculi but stone debris and blood clots. The general condition of the patients except one was improved quickly after operation and discharged after 5.4 (±5.75) days.

Conclusion: Geriatric patient with urinary tract stones are occasionally found in combined risky con-

ditions like sepsis and are challenging to manipulate the stones because most underlying diseases make difficult to reach anesthesia and instrumentions. However, our study showed early and prompt manipulation of URS can improve patient condition without any serious complications.

MP-02.17

Comparing Emergency and Elective Semi-Rigid Ureteroscopic Lithotripsy for Patients with Ureteric Calculi

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Introduction and Objectives: Acute renal colic secondary to ureteric stones is a common presentation in urology practice. Failure of conservative management warrants stenting or nephrostomy tube placement. These measures provide prompt symptom relief and are followed by ureteroscopy (URS) or extracorporeal shockwave lithotripsy (ESWL). There is little available data regarding use of emergency ureteroscopy (EMURS). This study aims to compare safety and efficacy of the emergency versus elective ureteroscopic (ELURS) treatment of ureteric stones.

Materials and Methods: All adult patients with unilateral single radio-opaque ureteric stone who underwent semi-rigid URS from January 2007 to December 2015 were included. Patients with solitary kidney, Uro-sepsis, pregnancy or pre-operative drainage with nephrostomy or JJ stent were excluded. EMURS is defined as URS being performed within 24-48 hours of presentation, while ELURS is defined as URS performed after failed medical expulsive therapy. Patient, stone and outcome-related variables were compared in both groups. Stone free rate was defined as no evidence of stone on plain x-ray after 4 weeks.

Results: One hundred and twenty five patients in the EMURS group versus 250 patients in ELURS group were compared. Age, sex and comorbidities and serum creatinine were comparable in both groups. Mean stone size was 6.54 ± 3.282 mm in the EMURS group and 7.53 ± 3.108 mm in the ELURS group (p=0.0057). Majority of stones in EMURS group were located in distal ureter and uretero-vesical junction compared to proximal ureter in ELURS group ($p < 0.0001$). EMURS had a comparable mean operative time versus ELURS (34.54 ± 16.28 vs. 36.67 ± 20.070 minutes respectively). JJ stents were placed in 45.8% and 45.9% of EMURS and ELURS, respectively. Ancillary procedures (ESWL/Redo-URS) were performed in 17.92% (n=28) of EMURS and in 18.69% (n=46) of ELURS (p=0.8563). Overall complication rates were reported in 6.5% in EMURS and 14.5% in ELURS (p=0.0261) and they were mostly Clavein Grade 1. Stone free rate achieved was 75% in EMURS and 72.5% in ELURS, respectively.

Conclusion: Emergency URS for ureteric stones without other prior temporizing measures is a safe and effective one-stage definitive treatment option for patients with acute renal colic not responding to conservative management.

Moderated ePosters Session 3 Bladder Cancer

Friday, October 20
1415–1545

MP-03.01

Increased Utilization of Advanced Imaging Technology and Its Economic Impact for Patients Diagnosed with Bladder Cancer in the United States

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Introduction and Objective: Guideline recommended diagnostic imaging techniques for bladder cancer include computed tomography (CT) and magnetic resonance imaging (MRI). Guidelines suggest positron emission tomography–computed tomography (PET/CT) may be appropriate for invasive transitional cell carcinoma of the bladder. This study examined utilization patterns, predictors for use of advanced imaging and costs among Medicare beneficiaries diagnosed with bladder cancer.

Materials and Methods: We used the Surveillance, Epidemiology and End Results (SEER)-Medicare linked databases to analyze claims data for 36,855 patients aged 60-90 years diagnosed with bladder cancer from 2004 to 2011. The Cochran-Armitage test for trend was used to determine whether significant changes in the proportion of patients receiving advanced imaging after cancer diagnosis occurred during the time interval; trends in the usage of the imaging modality types were assessed. Multivariable logistic regression modeling was conducted to analyze potential demographic and clinical predictors associated with receipt of advanced imaging. The costs of imaging were measured using Medicare payments.

Results: While the overall trend of imaging use remained essentially unchanged over the study period, there was a significant decrease in the proportion of patients who received conventional imaging modalities (MRI and CT; $P < 0.05$) and a significant increase in the proportion of patients receiving the more advanced imaging modality (PET/CT; $P < 0.001$). On multivariable analysis, receipt of PET/CT was significantly higher in female patients, Non-Hispanics, residents in West Census region, patients with higher grade tumors, those diagnosed with advanced stage disease, hydronephrosis, and those that received radical cystectomy and chemotherapy. In the cost analysis, the estimated national excess medical spending for advanced imaging was $6.1 million.

Conclusion: The increased use of advanced imaging (PET/CT) and substantial costs associated with this rapid adoption suggests further efforts should be made to evaluate benefits of PET/CT in order to elucidate its appropriateness.

MP-03.02

Blue Light Cystoscopy for Diagnosis of Urothelial Bladder Cancer: Results from a Prospective Multicenter Registry

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Introduction and Objectives: Blue Light Cystoscopy (BLC) using hexaminolevulinate (Cysview) improves the detection of non-muscle invasive bladder cancer (NMIBC). We report on our experience from the multi-center prospective BLC with Cysview Registry and its utility in different scenarios.

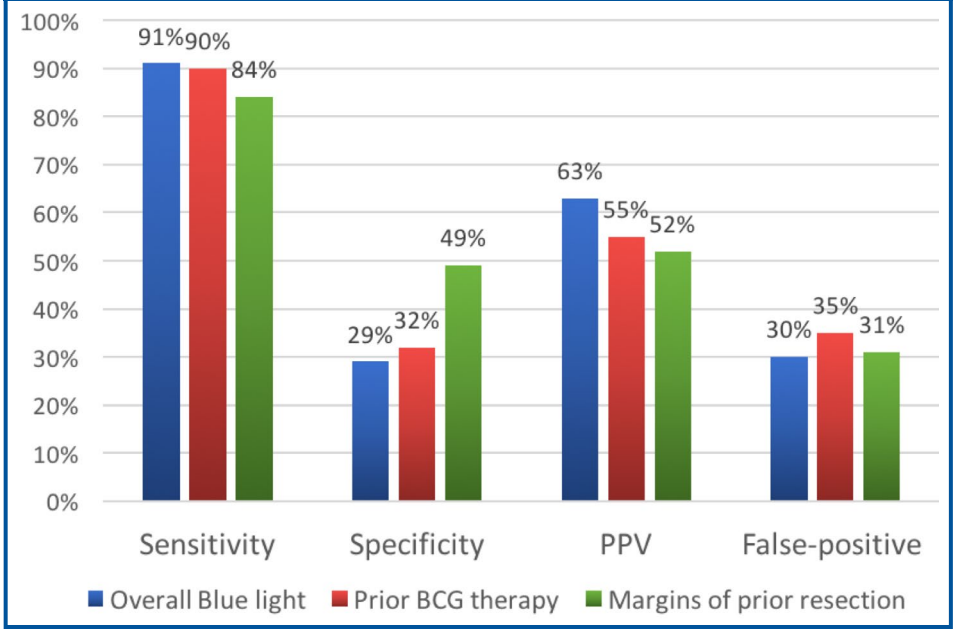
Materials and Methods: Under IRB approval, we prospectively enrolled consecutive patients undergoing transurethral resection of bladder lesions into the registry at 9 different centers. Patients who refused catheter insertion (8), had pure upper tract or prostatic urethral lesions (7) or were lost to follow up (10) were excluded from the study.

Results: Between April 2014 and Dec 2016, 1632 separate lesions were identified from 641 BLC procedures on 533 patients (mean age 72 years, 84% male). Eighty five patients (16%) underwent repeat use (2-5). Using final pathology as the reference standard, the sensitivity of WL, BL and the combination for any malignant lesion was 76%, 91% and 98.5% respectively. The addition of BL to standard WLC increased the detection rate by 12% for any papillary lesions and 43% for CIS (Table 1). Within the WL negative group, an additional 206 lesions in 133 (25%) patients were detected exclusively with the addition of BL. In multifocal disease, BLC resulted in AUA risk-group migration in 33 (6%) patients. Furthermore, new malignant lesions were exclusively discovered by BLC in 41 (8%) patients. BLC resulted in a change in recommended management in 74 (14%) of the whole cohort. Overall false-positive (FP) rate was 25% for WL and 30% for BL. 199 (37%) patients received BCG at least 6 weeks prior to BLC, with a positive predictive value (PPV) of BLC-detected malignancy being 55%. 95 biopsies were taken from margins of a previous resection site (with more than 6 weeks' interval), wherein the PPV of BLC was 52% for malignancy (FP=31%) (figure 2). Among the positive/suspicious cytology within

MP-03.02, Table 1. Detection Rate of Different Bladder Lesions using White and Blue Light Cystoscopy

Detection rate (sensitivity)	Any malignancy	Any papillary	Low-Grade papillary	High-Grade papillary	CIS
White light only	**76%**	87%	86%	86%	**55%**
Blue light only	91%	91%	91%	92%	91%
Either white or blue light	**98%**	99%	99%	99%	**98%**

MP-03.02, Table 1. Detection Rate of BLC Therapy and at the Margins of a Prior Resection



8 weeks of BLC, patients who had no lesions on WL (111 total), BL detected an additional 58 malignant lesions in 36 patients (sensitivity 97%). There was one mild dermatologic hypersensitivity reaction noted (0.2%). 49 (9%) patients eventually underwent cystectomy, 4 (8%) of whom exclusively because of lesions detected by BLC.

Conclusions: BLC increases detection rates of CIS and papillary lesions over WLC alone and can improve the management in about 14% of these patients. Recent BCG therapy does not appear to impact BLC accuracy. Repeat use of Cysview for BLC is safe.

MP-03.03

The Long-Term Impact on NMIBC Recurrence within a Matched-Paired, Index-Control Cohort Setting – NBI–Bipolar Plasma Vaporization Hybrid Approach versus the Standard Diagnostic and Therapeutic Management

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Introduction and Objectives: A combined diagnostic (white light cystoscopy-WLC and narrow band imaging-NBI) and treatment (bipolar plasma vaporization-BPV and biopsy resection) approach was compared to the standard protocol (WLC and monopolar transurethral resection of bladder tumors-TURBT) in large NMIBT cases.

Materials and Methods: A matched-paired, index-control, cohort study included 260 patients with at least 1 bladder tumor over 3 cm. Index patients (n=130) were prospectively enrolled and underwent standard and NBI cystoscopy, followed by BPV (tumor staging and complete removal confirmation using bipolar resection). In the retrospectively selected control cases (n=130), WLC and TURBT were solely applied. The matched pairs were determined based on the similar recurrence risk category according with the EORTC risk score. Standard Re-TUR was performed at 4 weeks, followed by 1 year' BCG immunotherapy. The follow-up protocol included urinary cytology and WLC, performed every 3 months for a period of 2 years and every 6 months for the next 2 years.

Results: BPV emphasized significantly reduced rates of obturator nerve stimulation (2.7% vs 18.4%), bladder wall perforation (0.9% vs 6.4%), as well as mean hemoglobin level drop (0.47 g/dl vs 0.96 g/dl), catheterization period (48.6 hours v. 74.1 hours) and hospital stay (2.9 days vs 4.2 days). NBI cystoscopy was characterized by significantly improved tumor detection rates (CIS-95.3% vs 65.1%; pTa-93.3% vs 82.2%; overall NMIBT-95% vs 84.2%). NBI additional lesions' cases were significantly more numerous regardless of tumor stage (pTa-24.1% vs 10.3%; pT1-33.7% vs 7.2%; NMIBT-31.1% vs 8%). Significantly lower Re-TUR' overall (6.3% vs 17.4%) and primary site (3.6% vs 12.8%) residual tumors' rates were determined secondary to NBI-BPV. The 1 (7.2% vs 18.3%), 2 (12.4% vs 25.8%), 3 (16.1% vs 30.9%) and 4 (19.7% vs 34.5%) years' recurrence rates were significantly reduced in the NBI-BPV series. Differences between study arms significantly gradually decreased and lost statistical significance after 2 years.

Conclusions: BPV emphasized superior surgical safety, decreased bleeding risks and faster postoperative recovery. NBI cystoscopy significantly improved the NMIBT diagnostic accuracy. The hybrid approach determined a significant reduction in tumor recurrence rates up to 4 years of follow-up, while differences between methods decreased in time.

MP-03.04

Accuracy of High B Value Diffusion Weighted Mr Imaging in Predicting the Tumour Stage and Grade in Carcinoma of the Urinary Bladder: A Prospective Study on 3 Tesla

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Introduction and Objective: Treatment and prognosis in urinary bladder cancer is determined by histopathological analysis of TUR-BT specimen. TUR-BT is invasive and understages a significant percentage of cases. We aimed at establishing the role of Diffusion Weighted Imaging (DWI) over T2WI in predicting tumor stage (muscle invasion) and tumor grade.

Materials and Methods: Between Jan 2014 and Oct 2015, 40 patients diagnosed as having a bladder tumor based on USG, CT or cystoscopy was recruited. They were imaged on a 3 Tesla MRI. The protocol included T1W, T2W and DWI at four b values (0, 500, 1000&1500). The patients then underwent surgery (TUR-BT or Radical Cystectomy) within 20 days of the imaging. MRIs were analyzed by two experienced radiologists both blinded to histopathology. The following factors were recorded as indicators of muscle invasive disease: Non-papillary morphology on T2WI, Perivesical fat infiltration on T2WI, Restricted distension of underlying bladder-wall on T2WI, Perivesical fat infiltration on DWI, absent tumoral stalk on DWI and Distorted tumoral stalk on DWI. The last two criteria are being described by our group for the first time. All the criteria were analyzed as predictors of muscle invasive disease using chi-square test. For predicting the tumor grade a freehand ROIs were drawn from the darkest areas on ADC maps and mean taken. To obtain a cut-off ADC for predicting a high grade tumor an ROC curve analysis was done.

Results: Mean age 56.25+11.11 years, M: F: 37:3. There were 90 evaluable tumors in 40 patients. Twenty three had single tumor. Mean tumor size 2.9+1.9 cc. On uni-variate analysis each of the seven listed features showed significant association with muscle invasive disease on histopathology. The strength of association, sensitivity and diagnostic accuracy were highest for the finding of absent stalk or distorted stalk on DWI with a high b value (0.87, 87.5% and 94.8% respectively) and weakest for that of restricted wall distension on T2WI (0.38). The former showed excellent specificity (97.6%) and PPV (93.3%). The least sensitive (25%) but most specific (100%) finding was fat infiltration on DWI. A cut-off ADC of 0.841X10-3 mm2/s could differentiate high grade tumors from low grade tumors with a sensitivity of 82.8% and specificity of 81.8%.

Conclusions: Diffusion weighted MRI with a high b value on a 3 Tesla machine is a highly accurate imaging modality in predicting muscle invasive and also high grade disease. It should become the imaging modality of choice in carcinoma of urinary bladder. MR images, cystoscopic images and histopathologic slides of representative cases can be shown in the presentation.

MP-03.05

Is Re-Implantation Theory True: Post Operative Drainage Tool for Bladder is a Risk Factor of Recurrence in Low Risk Bladder Tumor?

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Introduction and Objective: Low-risk bladder cancer defined as single pTa low-grade papillary tumors with size inferior than 3 cm is the tumor with the most favorable oncologic outcome. No adjuvant therapy is needed for those tumours because low risk of recurrence and progression. The implantation theory suggests that tumor cells in one location lose their attachments and float in the urine until they reattached. According to this theory, does the drainage without continued saline irrigation in post operative of bladder resection increase recurrence risk? The aim of this work is to evaluate the role of post operative bladder drainage in recurrence of staged low risk bladder tumors.

Materials and Methods: Between 2000 and 2015, 4205 bladder tumors were managed in our department, from them 74 patients were diagnosed with primary stage low risk bladder tumor and didn't receive any adjuvant therapy. Their clinical presentations, management and follow up were recorded. Two groups were formed according to the post operative drainage tool; the first group was drained by Foley catheters (FC) and the second by Three-way haemostatic catheters with saline irrigation (TWHC) in post operative. Urine cytology and cystoscopy were used to assess recurrence in all patients according to standard protocol.

Results: Thirty three patients were drained by FC and 41 patients were drained by TWHC. Both groups were similar in dempography, risk factors and management. For the first group, the recurrence rate was 21% and the mean period of recurrence was 11 months with a median follow-up of 28 months. For the second group the recurrence rate was less (19%) without statistically significant difference. The mean period of recurrence was 7 months and a median follow-up of 26 months. The tumor size was significantly associated with a higher risk for developing local recurrence

Conclusion: The type of post operative catheter drainage did not affect the risk of recurrence of bladder low risk tumors and this goes against the re-implementation theory according to this study.

MP-03.06

A Three-Dimensional Bioprinted Bladder Cancer Recurrence Model

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Introduction and Objective: Advancements in tissue engineering have produced new methods for drug testing, particularly three-dimensional (3D) organoid models or organ-on-a-chip platforms that enable drug discovery or pathophysiologic disease investigations. Bladder cancer is one of the most expensive neoplastic diseases to treat; it involves high recurrence rates, invasive surveillance methods, and low-specificity therapies. We aimed to create a 3D in vitro bladder model with which to test recurrence rates and perform drug screening.

Materials and Methods: The construct was fabricated to closely resemble a human bladder by layering a microfluidic device with urothelial and smooth muscle surfaces with an intervening layer that mimics the subconjunctival space; all cells were human primary cells procured from patients who underwent bladder surgeries. For bladder tumors, we used cancer organoids formed from GFP-labeled T24 cells in an Aggrewell system. The urothelial layer was seeded with fibronectin on the bottom of the transwell membrane, while the bladder smooth muscle layer was bioprinted on the top of the membrane using collagen/fibrin/laminin-mixed hydrogel loaded with smooth muscle cells. The cancer organoids were placed in contact with the urothelial surface to mimic stages Ta and T1 bladder cancers. Constructs were divided into 3 groups: no treatment, microscopic excision of the cancer organoid without therapy, and microscopic excision of the cancer organoid with adjuvant therapy (mitomycin C [0.5– 2 mg/mL] or BCG [0.5–5 mg/mL]).

Results: In the first group, cancer cells migrated from the urothelium to the muscle layer within 1 week. In the second group, cancer cells were almost undetectable if the tumor organoids were completely excised. In the third group, initial results suggested that a higher dose of mitomycin C (1–1.5 mg/mL) was required to reduce the tumor recurrence rate in the urothelial layer; increasing the dosage maintained good urothelial layer viability (up to 85%). Interestingly, the lower BCG dose (1.5mg/mL) produced a better recurrence-free response than the higher dose (5 mg/mL), with low cytotoxicity.

Conclusion: Precise 3D bioprinting replicates the physiological cancer architecture. This platform enables the study of bladder cancer microenvironments in a bioengineered milieu that is precise, scalable, and biologically relevant, and is effective for high-throughput screening.

MP-03.07

Intraoperative Frozen Section Evaluation of the Tumor and Its Base in Patients with T1 Urothelial Bladder Cancer

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Introduction and Objectives: Transurethral resection of bladder tumor (TURBt) remains the main management of non-muscle invasive bladder cancer, but there is evidence of a high rate of understaging for T1 tumor after primary resection. Muscle in the specimen is important for the accurate bladder staging. However, nearly 40% resected bladder specimens were failed to be found muscle after the initial TURBt even done by the sophistic urologists. Therefore a second TURBt was justified for correcting the staging error and removing the residual tumors. The frozen section examination can provide a rapid microscopic analysis of a specimen. In this study, we prospectively investigated the tumor base and whether muscle was present in the specimen using frozen section examination, and discussed its value in the initial TURBt.

Materials and Methods: From June 2011 to Oct 2016, a total of 95 consecutive patients with T1 bladder cancer were included in this study. A standard TURBt was performed. Once the tumor was removed, the tumor base was either biopsied using cold-cup biopsy forceps or resected. An aliquot of resected tumor as well as the tumor base were both sent for pathological frozen section examination in a separate labeled pot. Then a repeat resection was performed based on the pathological findings either if cancer cells were present in the tumor base or the muscle was present in the specimen. The results, including positive tumor base, presence of muscle in the specimen, tumor stage, residual tumor and concordance between frozen section and paraffin embedded section were compared.

Results: Twenty six (27.4%) patients had a positive tumor base. 54 (56.8%) tumor bases were found muscle in the specimen while 34 (35.8%) were not found and 7 (7.4%) were difficult to diagnosis because of the over-cauterization of the base specimen. Of 52 (54.7%) patients who underwent a repeat resection, 18 (34.6%) were found residual tumor and 15 (27.8%) were upstaged to muscle invasive tumor. The paraffin embedded section demonstrated 32 (61.5%) specimen were found muscle in patients undergoing the repeat resection. The concordance of muscle in the specimen between the frozen section and paraffin embedded section was 94.7%.

Conclusion: The frozen section examination was justified for the diagnoses of positive tumor base and muscle in the specimen, and it can help to remove the residual tumors and decrease the staging error for T1 urothelial bladder cancer during the initial TURBt.

MP-03.08

The Role of Vitamin D Receptor Polymorphisms in Predicting Response to Therapy in Non-Muscle Invasive Bladder Carcinoma

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Introduction and Objectives: Clinicopathological factors predicting for response to Bacillus-Calmette Guerin (BCG) treatment for non-muscle invasive bladder carcinoma (NMIBC) are well defined but there is a paucity of data on genetic factors. Vitamin D has been found to have immunomodulatory effects in pre-clinical bladder cancer studies. Various single nucleotide polymorphisms of the Vitamin D Receptor (VDR) gene has also been found to be associated with response to treatment for mycobacterium [3]. In this study, we evaluated the predictive role of 3 VDR single nucleotide polymorphisms (SNP) in patients with NMIBC in assessing BCG immunotherapy outcome.

Materials and Methods: Peripheral blood DNA was prospectively obtained from 140 evaluable EORTC intermediate to high risk NMIBC patients, who underwent post-transurethral resection intravesical regimes of BCG or BCG with interferon alpha. Three VDR SNPs commonly implicated in susceptibility to tuberculosis infections were evaluated using high resolution melt (HRM) analysis followed by DNA sequencing. Kaplan-Meier together with Log-Rank test and Cox regression methods were used to analyze the data.

Results: Genotype frequencies were similar between the NMIBC patients and controls in accordance to the Hardy Weinberg equilibrium. Mean follow-up time was 91.9 months. Overall mean time to recurrence and progression was 25.8 months and 47.0 months respectively. Kaplan-Meier analysis indicate that individuals carrying the VDR genotype rs1544410 A/G were significantly associated with lower recurrence-free survival rates after BCG therapy (p=0.007). The VDR rs1544410 "A" allele frequency was found to be higher in patients with bladder cancer recurrences (p=0.01). 100.0% of patients with the VDR genotype rs731236 C/C had carcinoma in situ of the bladder, compared to 20.5% of the patients with the genotype T/T and 12.5% of the patients with the genotype T/C ($\chi 2$ (2)= 8.31, p=0.016). No association of VDR genotypes with progression-free survival was found.

Conclusions: Our findings suggest that polymorphisms in the VDR gene correlate with response to BCG therapy in NMIBC patients and further work should be performed to evaluate their utility as predictive markers of response to BCG immunotherapy.

MP-03.09

Intravesical Immunomodulatory Imiquimod Enhances Bacillus Calmette-Guérin (BCG) Down Regulation of Non-muscle Invasive Bladder Cancer

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Introduction and Objective: TLR agonist bacillus Calmette-Guérin (BCG) although not failure proof, has been the most efficient immunomodulatory treatment in the immunogenic non-muscle invasive bladder cancer (NMIBC) for over 40 years. We investigated the role of immunomodulatory molecule TLR agonist Imiquimod through the main downstream molecules of mammalian Target of Rapamycin (mTOR) pathway and the BCG key receptors TLR 2 and 4 in NMIBC treatment.

Materials and Methods: Fischer 344 rats, 7 weeks age, received intravesically 4 doses of 1.5mg N-methyl-n-nitrosourea (MNU), weekly for cancer induction. The animals were randomized in 4 groups (10/group): CONTROL (0.2 ml vehicle), BCG (106 cfu Connaught strain); Imiquimod (20mg/kg) and synergistic treatment BCG-Imiquimod. All groups were treated intravesically during 6 weeks, once a week. The bladders were extracted and analyzed for histopathology, immunohistochemistry, cell proliferation (Ki-67), apoptosis (TUNEL), and immunoblotting: p-p70S6K, p-4E-BP1, TLR2 and TLR4 proteins.

Results: The histopathology results showed that BCG and Imiquimode decrease bladder tumorigenesis compared to Control group with proliferation decrease (Ki-67) and apoptosis increase (TUNEL). BCG upregulated TLR2 and Imiquimod upregulated TLR4 and downregulated p70S6K1.

Conclusion: TLR7 agonist Imiquimod down-regulates bladder tumorigenesis through TLR4 and p70S6K, generating new perspectives to boost BCG effects in the future.

MP-03.10

Are We Subjecting Too Many Patients to an Early Re-Resection?

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Introduction and Objective: Early re-resection is recommended for incomplete primary resections, large or multiple tumours, the presence of high-grade disease, or the absence of muscle in the specimen. Current evidence in high-grade disease shows residual disease in 33-53%, with upstaging to muscle-invasive disease in 4-25% (1). Recent evidence suggests re-resection may not be necessary in high-grade disease when the primary resection contains muscle (2). Our objective is to investigate patients diagnosed with high-grade bladder cancer and assess if patients may benefit more from commencing intravesical BCG over early re-resection.

Materials and Methods: Ninety four patients were found to have high-grade disease on their first resection between January 2014 and July 2016. Retrospective data was collected on initial resection, re-resection, and treatment.

Results: Fouty three patients (46%) had muscle in their first resection. Twenty two patients (23%) had concomitant carcinoma-in-situ. Seventy seven patients (82%) had an early re-resection. Four patients (4.3%) were upstaged to muscle invasive bladder cancer; 2 had concomitant carcinoma-in-situ and lacked muscle in the first resection, 1 lacked muscle, and 1 had an incomplete resection. Forty patients (52%) had residual tumour on re-resection. Eight out of seventeen patients had no residual disease when muscle was in the primary resection and re-resection was completed within 8 weeks compared with 11/22 when muscle was present and re-resection was delayed beyond 8 weeks.

Conclusion: In our practice, under-staging was rare. We would propose not all patients require an early re-resection. Further sub-classification of high-grade disease based upon MDT discussion of operative and histological findings would enable optimisation of treatment in this group of patients.

MP-03.11

En Bloc Transurethral Resection with Hybrid Knife for Treatment Primary Non-Muscle-Invasive Bladder Cancer: A Single-Center, Randomized, Controlled Trial

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Introduction and Objective: To evaluate the safety and effectivity y of en bloc transurethral resection with Hybrid Knife as treatment for primary non-muscle-invasive bladder cancer (NMIBC) compared to conventional transurethral resection of bladder tumor

Materials and Methods: This was a single-center, randomized, and controlled trial. From March 2016 to September 2016, 86 patients with newly diagnosed NMIBC were enrolled and evaluated with ultrasonography CT scan and cystoscopy. All patients were randomly assigned in a 1:1 ratio to receive either Hybrid Knife En bloc transurethral resect treatment or conventional transurethral resection of bladder tumor (TURBT). The clinical characteristics of the patients in each group, such as age, gender, BMI index and disease type had no significant differences (P>0.05). Patients with tumor number more than five was ruled out. All patients received intravesical chemotherapy postoperation. After 6-12 month follow-up, patients underwent imaging and cystoscopy examinations. Primary outcome measure was difference of tumor recurrence rate at the end of study.

Results: Major intraoperative or postoperative complications did not occur in all of the patients. Operation time was longer in Hybrid Knife En bloc group than in TURBT group when tumor size more than 3cm and tumor number more than three (45,1 ± 18.7 vs. 39.2 ± 19.1 min, P <0.05). Obturator nerve reflection was noted during TURBT in 17 patients, 13 patients was noted during Hybrid Knife En bloc resection (P>0.05). Number of low risk NMIBC patients was lower in the Hybrid Knife En bloc resection group (17 vs. 25 P <0.05). However, number of moderate and high risk NMIBC patients (T1a, T1b, TaG2, TaG3 Staging) was higher in the Hybrid Knife En bloc resection group (26 vs. 18, P <0.05). According to Kaplan–Meier survival curves, there was no statistical difference in the rate of recurrence in 6-12 months ($P = 0.079$).

Conclusion: en bloc transurethral resection with Hybrid Knife did not decrease tumor recurrence rate in primary NMIBC for 6-12 months observation. However, T1 tumors were significantly higher among Hybrid Knife group. en bloc resection can reserve tumor margins completely and Clearly than TURBT, which may enable pathologists to distinguish the T stages of bladder cancer more accuracy. Further studies need to be done in future. A multi-center, randomized, prospective, study with a large sample and a long follow-up time is needed to be done in future.

MP-03.12

Recirculative Neoadjuvant Chemohyperthermia in NMIBC Patients

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Introduction and Objective: We review the safety and efficacy of neoadjuvant Hyperthermic Intra-VEsical Chemotherapy (HIVEC™), delivered with the COMBAT system in a group of patients with intermediate or high risk NMIBC.

Materials and Methods: A total of 8 weekly instillations of 80 mgs of Mitomycin-c (MMC) diluted in 50ml of distilled water, recirculated through the bladder during one hour at a 43°C (±0.5°C). A complete TURB was then performed and pathologic findings were registered. A total of 37 patients were treated in the Monforte Comarcal Hospital (Spain) between December 2010 and December 2016. Tolerance data were recorded and quality of life FACT-BI and IPSS questionnaires completed. Follow up of patients varied from 6 to 78 months to detect any tumoral recidive or long term complications.

Results: 96.3% (285 of 296) of the scheduled HIVEC™ neo adjuvant treatments were accomplished. The most frequent adverse events were mild (Grade1). Patient outcome: complete response (confirmed pathology) rate 62.1 % (n=23). Partial response (reduction of tumour load >50%) 32.4% (n=12). Non-responder 5.4% (n=2). The cumulative incidence of recurrence at 5 years was 26.1% (95%CI: 4.1 to 45.3%).

Conclusion: Combat-BRS has a favourable side effect profile. Neoadjuvant HIVEC™ treatment seems to be effective against NMIBC. It achieves the complete elimination of the tumor in two thirds of the treated patients and obtained a low number of relapses up to 5 years of follow up. More randomised trials are needed to clarify its use in the clinical practice.

MP-03.13

Patterns of Neoadjuvant Chemotherapy Use and Its Impact on Optimal Timing to Radical Cystectomy for Patients with Muscle Invasive Bladder Cancer

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Introduction and Objective: Neoadjuvant chemotherapy with radical cystectomy is now the standard of care for muscle-invasive bladder cancer in Europe and the United States. We aimed to discern the impact of delayed timing associated with the use of neoadjuvant therapy to the survival benefit of radical cystectomy.

Materials and Methods: Patients with stage II-IV bladder cancer between January 1, 2001 and December 31, 2011 were identified from the Surveillance, Epidemiology, and End Results? Medicare linked data. The data was stratified based on neoadjuvant chemotherapy use. Temporal trends in neoadjuvant chemotherapy and delayed radical cystectomy were assessed using the Cochran–Armitage test. Logistic regression models and generalized linear models were performed to determine the association between patient and clinical factors and the use of neoadjuvant chemotherapy, as well as delayed radical cystectomy. Cox proportional hazards models were used to compare overall survival controlling for patients' demographics and clinical characteristics.

Results: A total of 2,738 patients met the study criteria, of whom 344 (12.6%) received neoadjuvant chemotherapy. The use of neoadjuvant chemotherapy more than tripled during the study period, from 5.7% in 2001 to 17.3% in 2011 (p < 0.0001). The observed rate of delayed radical cystectomy averaged approximately 44% over the study period. The use of neoadju-

vant chemotherapy was associated with delayed radical cystectomy (relative risk [RR] 1.21, 95% CI 1.08 to 1.35; p < 0.001). Among patients who underwent delayed radical cystectomy, neoadjuvant chemotherapy was not associated with survival benefits.

Conclusion: Use of neoadjuvant chemotherapy can significantly delay the time to radical cystectomy and offered no superior overall survival compared to patients who undergo delayed radical cystectomy without neoadjuvant chemotherapy. In refining current ASCO and EAU guidelines, surgery eligible bladder cancer patients should initiate radical cystectomy promptly after neoadjuvant chemotherapy.

MP-03.14

Association between Pre-Cystectomy Epithelial Tumor Marker Response to Neoadjuvant Chemotherapy and Oncological Outcomes in Urothelial Bladder Cancer

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Introduction and Objectives: We previously reported that elevated pre-cystectomy serum levels of epithelial tumor markers predict worse oncological outcome in patients with invasive bladder cancer (BC). Herein, we evaluated the effect of neoadjuvant chemotherapy (NAC) on elevated tumor marker levels and their association with oncological outcomes.

Materials and Methods: Under IRB approval, serum levels of Carbohydrate Antigen 125 (CA-125), Carbohydrate Antigen 19-9 (CA 19-9) and Carcinoembryonic Antigen (CEA) were prospectively measured in 480 patients with invasive BC from August 2011 through December 2016. In the subgroup undergoing NAC, markers were measured prior to the first and after the last cycle of chemotherapy (prior to cystectomy).

Results: Three hundred and thirty seven patients were eligible for the study, with a median age was 71 years (range 34-93) and 81% (272) male. Elevated pre-cystectomy level of any tumor markers (31% of patients) was independently associated with worse RFS (HR=2.81; p<0.001) and OS (HR=3.97; p<0.001). 125 (37%) patients underwent NAC, of whom 59 had a complete tumor marker profile before and after therapy and 30 (51%) had one or more elevated pre-NAC tumor markers. Following completion of chemotherapy, 10/30 (33%) patients normalized their tumor markers, while 20/30 (67%) had one or more persistently elevated markers. There was no difference in clinical or pathological stage between groups (p=0.54 and p=0.09, respectively). Further analysis showed a significantly lower rate and longer median time to recurrence/progression in the responder group (50% in responders vs 90% in non-responders at a median time of 22 vs 4.8 months respectively; p=0.015). There was also significant difference in mortality rates and median overall survival between the study groups (30% in responders vs 70% in non-responders at a median time of 27.3 vs 11.6 months respectively; p=0.037). Kaplan Meier curves are shown in Figure 1. Two of the three patients that died in the normalized tumor marker group had tumor marker relapse at recurrence prior to their death.

Conclusions: To our knowledge, this is the first study showing tumor marker response to NAC. Patients with persistently elevated markers following NAC have a very poor prognosis following cystectomy, which may help in identifying chemotherapy-resistant tumors. A larger, controlled study with longer follow up is needed to determine the role of these markers in predicting survival.

MP-03.15

Pfannensteil or Midline Incision for Minimally Invasive Radical Cystectomy: Retrospective Analysis, Single Centre Experience

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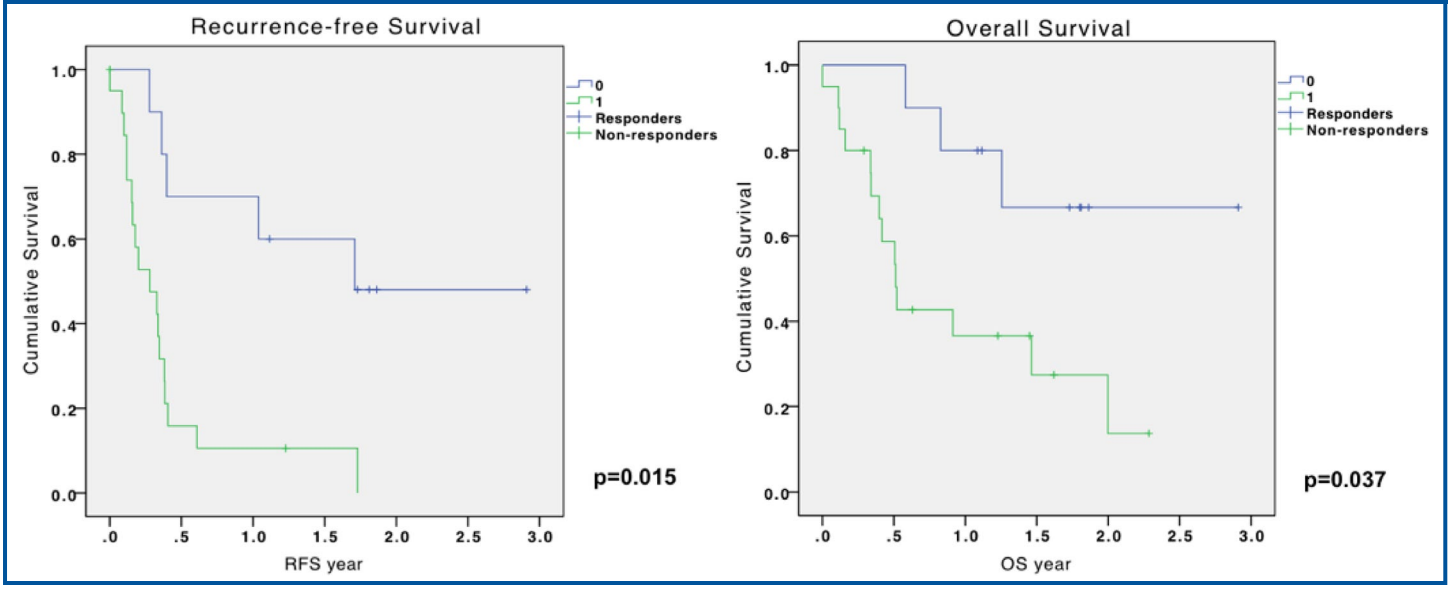
Introduction and Objective: To access the morbidity on comparing Pfannensteil versus Midline incision following minimally invasive radical cystectomy

Materials and Methods: It is retrospective comparative study, Study period was February 2004 to February 2017, Number of patients studied (n=115). Patients were divided into Group A those with Pfannensteil incision and Group B those with Midline incision. Parameters analyzed were age (in years), sex, co- morbidity, history of smoking or tobacco chewing, occupation, presentation, CT findings, hydronephrosis, TURBT Report, ICUSG finding, duration of surgery (in minutes), hemoglobin drop (in gram per deciliter), need for blood transfusion (number of units), hospital stay (in days), epidural analgesia, analgesic requirement (in milligrams of tramadol), pain score on first 3 post operative days (on Visual analogue scale), final histopathology, complications, delayed follow up, lymph node yield (numbers), neo adjuvant chemotherapy. Standard steps were Cystectomy with bilateral pelvic lymph-adenectomy done either through laparoscopic or robotic approach and specimen retrieval along with diversion through either Pfannensteil or Midline incision.

Results: In our retrospective study, Post operative pain score (P=0.0001), analgesic requirement (P=0.0003), length of hospital stay (P=0.0003), duration of surgery (P=0.0002), Post operative paralytic ileus duration (P=0.0006), Post operative wound complication (P=0.002) were less (statistically significant P<0.05) for Group A as compared to Group B. But post operative hemoglobin drop (P=0.03), number of units blood transfused (P=0.189), and lymph node yield (P=0.533) were comparable in either group

MP-03.14, Figure 1. RFS and OS for Tumor Marker Response Groups after Neoadjuvant Chemotherapy (NAC)



(statistically insignificant P≥0.05). No statistically significant difference with respect to age and sex in either group (P=0.30, P=0.57 respectively).

Conclusion: Our study suggests that, minimally invasive (laparoscopic or robotic) radical cystectomy with Pfannensteil incision offers advantage of less morbidity than midline incision.

MP-03.16

Risk Factors and an Attempt to Develop Pre-Operative Nomogram to Predict Perioperative Complications after Radial Cystectomy for Japanese People

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Introduction and Objectives: Radical cystectomy (RC) is the gold standard for managing muscle-invasive and high-risk non-muscle-invasive bladder cancer, but is accompanied by nonnegligible operative risk. Appropriate recognition of risk factors of RC-related complications may better guide surgical decision making. We already reported two papers based on this cohort (BJU2012, IJU2014). In the present study, we redefined nasoenteric tube as Clavien grade 3 according to Japan Clinical Oncology Group postoperative complications criteria and simultaneous nephroureterectomy is added to variables. Therefore, we thought to identify preoperative variables to predict perioperative complications after RC and attempt to develop a first nomogram using multi-institutional Japanese database.

Materials and Methods: We retrospectively reviewed 668 patients who underwent open RC with ileal conduit or neobladder at Hokkaido University hospital and 20 affiliated institutions between 1997 and 2010. Preoperative clinical and comorbidity indices were collected. Complications occurring within 90-days of surgery were graded using the modified Clavien classification system. We defined Clavien grade 3 or more as major complications and performed univariate and multivariate logistic regression analyses. Predictive accuracy of the nomogram was evaluated with the area under the receiver operating characteristics (ROC) curve.

Results: A total of 528 men and 140 women (Ileal conduit: 493; Neobladder: 175) were included in this study. There were a total of 160/668 patients (24.0%) with major complications within 90 days after RC. A multivariate model identified hospital volume (10 or more RCs per year) (odds ratio [OR]: 0.57, 95%CI 0.33-0.95, p=0.03), simultaneous nephroureterectomy (OR: 3.2, 95%CI 1.3-7.9, p=0.01), gender (OR: 1.6, 95%CI 1.0-2.6, p=0.049) and cardiovascular comorbidity (OR: 1.5, 95%CI 0.47-0.97, p=0.03) as independent predictors of 90-days major complications. Using stepwise selection, types of urinary diversion were added in the nomogram. AUC of the nomogram was 0.62.

Conclusions: We identified annual cystectomy volume, simultaneous nephroureterectomy, male and cardiovascular comorbidity as independent predictors of major complications within 90-days of surgery. Predictive performance of our nomogram showed only fair performance. The more reliable and validated nomogram which permit more accurate risk stratification before RC appears warranted.

MP-03.17

Impact of Positive Surgical Margin on the Outcome of Radical Cystectomy for Urothelial Cell Carcinoma

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Introduction and Objectives: Radical cystectomy (RC) can be a morbid operation with variable outcomes. There are conflicting data regarding the association between positive surgical margins (PSM) and survival outcomes. We evaluated the association of PSM with outcomes of RC for urothelial cell carcinoma (UCC) within a single centre.

Materials and Methods: A prospective database was established in 1994 and consecutive patients who underwent a radical cystectomy (RC) between 1994 and 2016 within a single centre were reviewed.

Results: A total of 1279 RC were performed, 1110 were performed for UCC and 85 (7.7%) RC specimens revealed a PSM (ureteric/urethral, n=31; circumferential, n=32; both n=22). The Median (IQR) follow-up was 17.2 (9.0-30.4) and 30.3 (12.4-59.0) months for PSM and negative surgical margin (NSM) groups respectively. The overall survival (OS) in the PSM and NSM group was 67.1% and 40.0% (Chi-square p<0.001) respectively, and for disease-specific mortality (DSM), 56.5% and 26.1% (p<0.001) respectively. Kaplan-Meier analysis predicts a 5-year DSM of 32.5% with PSM (vs NSM 65.7%, log-rank p<0.001). Within PSM, the 5-year survival for circumferential PSM was 6.7% and 78.2% for ureteric/urethral PSM (log-rank p<0.001). Positive surgical margin was an independent predictor of OS (HR 2.27, p<0.001) and DSM (HR 2.90, p<0.001). On univariate analysis patients with poor survival in the PSM group was associated with age, female gender, transurethral resection >pT2, pTis, RC >pT2, M1+ and a circumferential PSM.

Conclusion: Positive surgical margin in particular circumferential is associated with poorer OS and DSM. Avoidance of PSM margins during surgery is import-

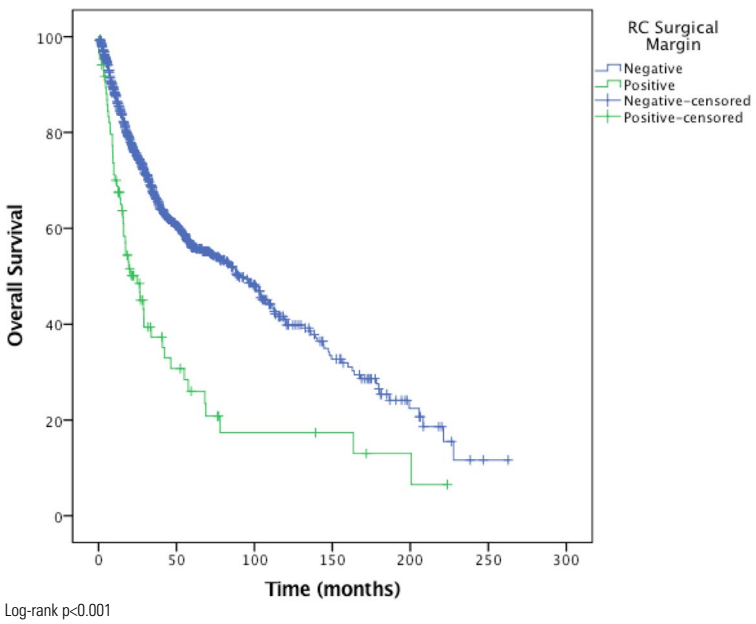
MP-03.17, Table 1.

	PSM	n	%
Total		85	
Gender	Male	64	75.3%
	Female	21	24.7%
Age	Mean (±st dev)	68.3 (9.9)	
Time from TUR to RC			
	Median (IQR)	3.8 (2.1-13.4)	
	<3 months	29	34.1%
	<6 months	43	50.6%
Neoadjuvant chemo	Yes	6	7.1%
	No	79	92.9%
Upper tracts	Normal	37	43.5%
	Unilateral hydrophrosis	14	16.5%
	Bilateral hydrophrosis	3	3.5%
	Nephrectomy/Anephric	0	0.0%
	Unknown	31	36.5%
Renal function	eGFR <60mls/min	18	21.2%
	eGFR >60mls/min	27	31.8%
	Unknown	40	47.1%
Status	Follow up (median, IQR)	17.2 (9.0-30.4)	
	Alive	28	32.9%
	Dead	57	67.1%
	All causes	57	67.1%
	30 days	4	4.7%
	90 days	5	5.9%
	UCC	48	56.5%

MP-03.17, Table 2.

	PSM	n	%
TUR T-Stage	cTa	12	14.1%
	cTis	2	2.4%
	cT1	23	27.1%
	cT2	38	44.7%
	cT3	4	4.7%
	cT4	5	5.9%
	Missing	1	1.2
TUR Tis present	No	38	44.7%
	Yes	39	45.9%
	Unknown	8	9.4%
RC T-stage	Tx/0	2	2.4%
	Ta	9	10.6%
	Tis	6	7.1%
	T1	13	15.3%
	T2	11	12.9%
	T3	18	21.2%
	T4	23	27.1%
	Inoperable	2	2.4%
	Missing	1	1.2%%
RC Nodes	Pos	26	30.6%
	Neg	59	69.4%
RC M-stage	Pos	2	2.4%
	Neg	83	97.6%
RC Margin	Ureteric/urethral	31	36.5%
	Circumferential	32	37.7%
	Both	22	25.9%

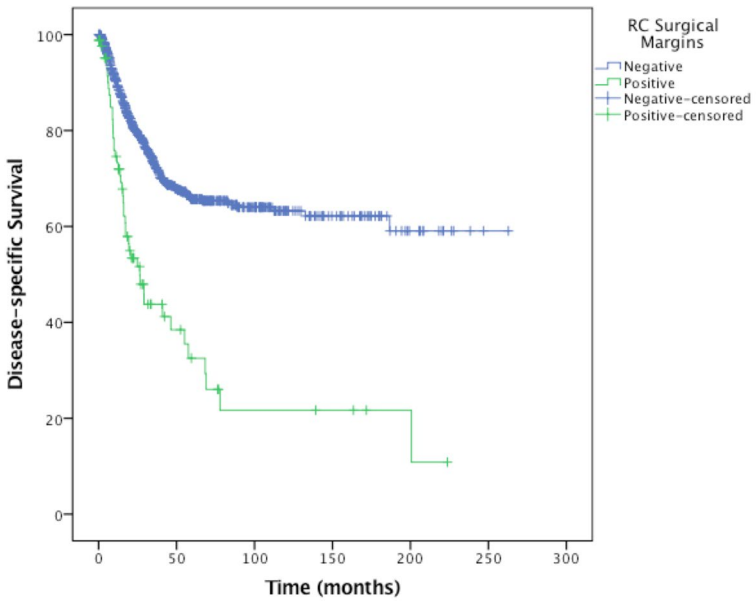
MP-03.17, Figure 1.



Log-rank p<0.001

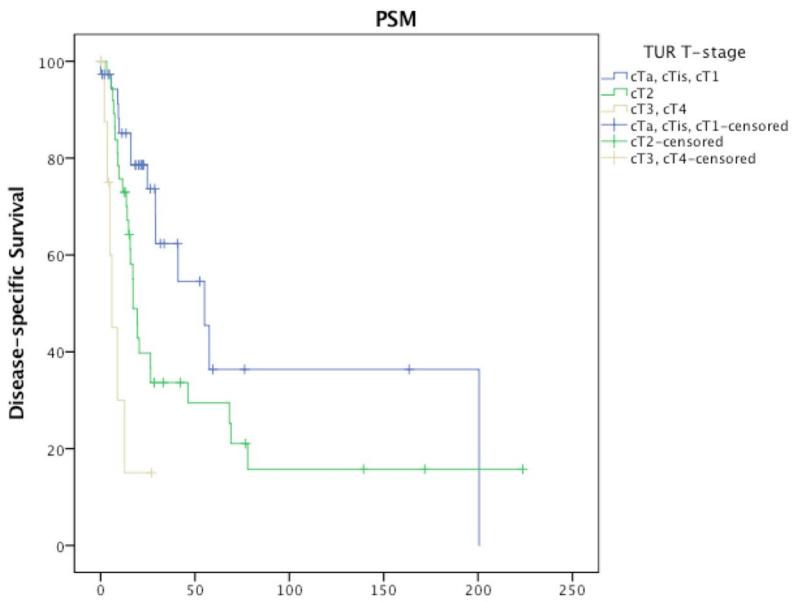
ant to improve the prognosis of patients with bladder cancer. Adjuvant therapy should be considered in patients with PSM.

MP-03.17, Figure 2.



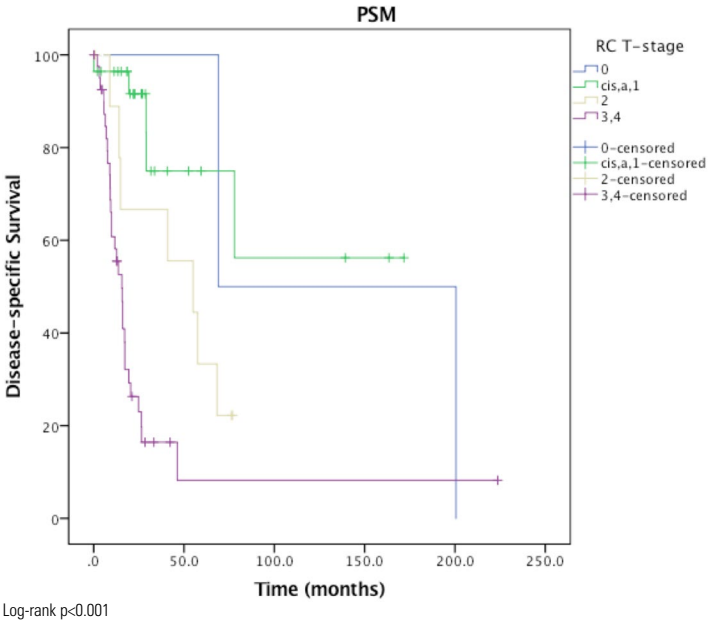
Log-rank p<0.001

MP-03.17, Figure 3.



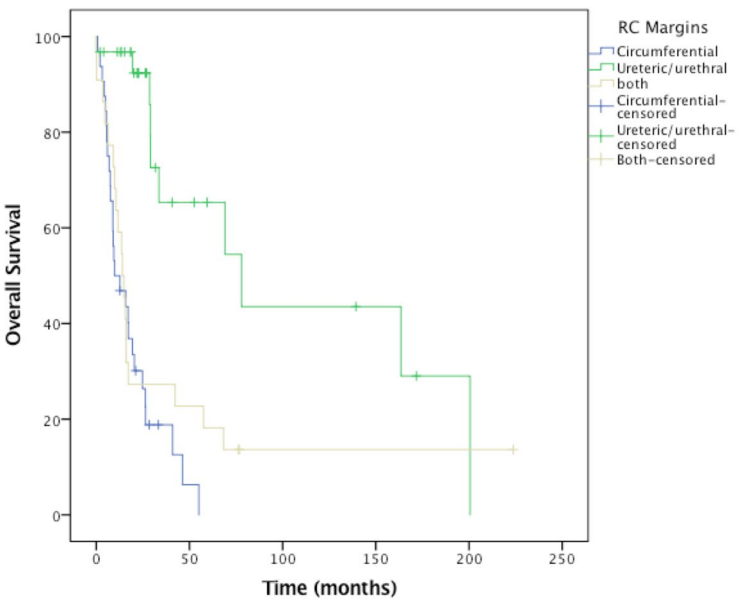
Log-rank p<0.001

MP-03.17, Figure 4.



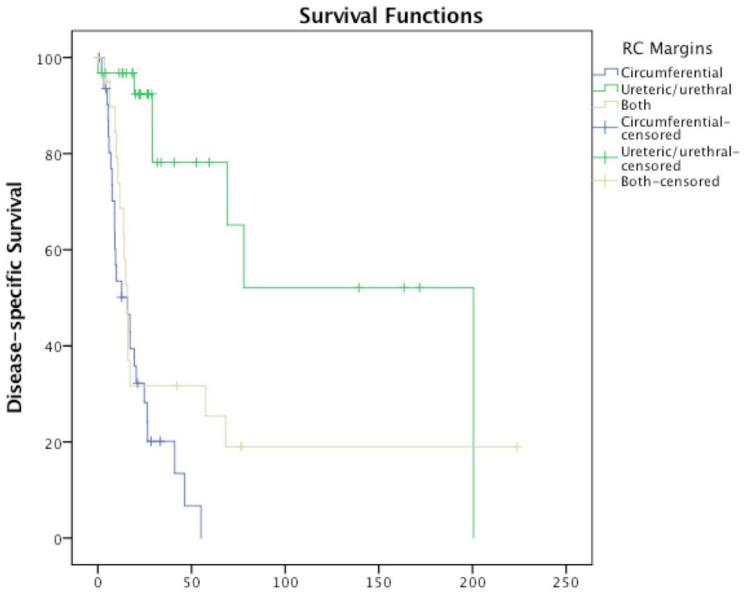
Log-rank p<0.001

MP-03.17, Figure 5.



Log-rank p<0.001

MP-03.17, Figure 6.



Log-rank p<0.001

MP-03.17, Table 3.

				Univariate 95% CI				Multivariate 95% CI			
	PSM	**n**	**%**	**HR**	**Lower**	**Upper**	**p-value**	**HR**	**Lower**	**Upper**	**p-value**
Total		85									
Gender	Male	64	75.3%	0.51	0.29	0.91	0.02	1.68	0.77	3.64	0.19
Age	Mean (SD)	68.3 (9.9)		1.04	1	1.07	0.02	1.05	1.01	1.08	0.007
TUR Grade	3	81	95.30%	2.29	0.32	16.62	0.413	3.56	0.42	29.87	0.24
TUR stage	>T2	47	55.3%	2.16	1.37	3.4	0.001	1.13	0.53	2.41	0.75
TUR Cis	Yes	39	45.9%	0.57	0.32	1	0.05	0.82	0.41	1.65	0.58
RC T-stage	>T2	52	61.20%	1.41	1.24	1.6	<0.001	2.3	1.5	3.52	<0.001
RC Nodes	Positive	26	30.6%	1.17	0.67	2.06	0.58	0.7	0.34	1.43	0.32
RC M-stage	Positive	2	2.4%	5.19	1.19	22.54	0.03	1.76	0.19	16.02	0.61
PSM	Circumferential	32	37.5%	1.78	1.27	2.50	0.001	1.16	0.64	2.13	0.620
Neoadjuvant chemo	Yes	6	7.10%	0.65	0.2	2.07	0.46	0.45	0.14	1.51	0.2

MP-03.18, Table 1. Pathologic Outcomes

Pathologic outcomes	n = 346	IQR
Histologic type, no. (%)		
Urothelial carcinoma	346 (100)	
Pathologic tumor stage, no. (%)		
T0/Ta/Tis	53 (15.3)	
T1/T2	184 (53.1)	
T3/T4	109 (31.6)	
High tumor grade	269 (77.7)	
Soft tissue margin positive, no. (%)	9 (2.6)	
Lymph node yield, Mean ± SD	17.1 ± 12.0	9.0 – 23.0
Number of patients with LN positive (%)	68 (19.7)	
Lymph node density (%), Mean ± SD	25.5 ± 27.1	7.1 – 41.9
Node negative, no. (%)	278 (80.3)	
Node density 1-20%, no. (%)	47 (13.6)	
Node density > 20%, no. (%)	21 (6.1)	
Pathologic nodal stage, no. (%)		
Nx/N0	279 (80.6)	
N1/N2/N3	134 (19.4)	
Follow-up, mo		
Mean ± SD	32.9 ± 25.4	7.0 – 50.3

*P < 0.05
SD: standard deviation; LN: lymph node

MP-03.18, Table 2. Logistic Regression Analysis of Variables Associated with Recurrence and Death from Bladder Cancer in 331 Patients after Treated with RARC

Variable	Cancer recurrence			Death from bladder cancer		
	OR	95% CI	P value	OR	95% CI	P value
Diversion technique						
(Ileal conduit vs OBS)	0.150	0.07 – 0.30	0.000**	0.071	0.02 – 0.25	0.000**
Positive surgical margin	10.916	1.90 – 62.57	0.007*	1.844	0.29 – 11.60	0.514
Type of PLND						
(extended vs standard)	2.816	1.27 – 6.20	0.010*	5.935	2.25 – 15.65	0.000**
Number of removed LN	0.946	0.91 – 0.99	0.010*	0.993	0.94 – 1.04	0.776
Number of positive LN	1.087	1.01 – 1.17	0.026*	1.042	0.93 – 1.17	0.484
Pathologic tumor stage						
(pT2 or less vs pT3 or pT4)	2.417	1.36 – 4.30	0.003*	3.804	1.80 – 8.05	0.000**
Nodal stage						
(N0/Nx vs N1/N2/N3)	1.027	0.39 – 2.71	0.957	1.019	0.31 – 3.39	0.976

*P < 0.05, **P < 0.01
OBS: orthotopic bladder substitution; OR: odds ratio; PLND: pelvic lymph node dissection

MP-03.18

Oncologic Outcomes and Predictive Factors for Recurrence following Robot-Assisted Radical Cystectomy for Urothelial Carcinoma: Multicenter Study from Korea

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Introduction and Objective: To evaluate intermediate-term oncologic outcomes, predictive factors for recurrence, and recurrence patterns in a multicenter series of patients treated with robot-assisted radical cystectomy (RARC) for urothelial carcinoma (UC) of the bladder.

Materials and Methods: Between 2007 and 2015, 346 patients underwent RARC at multiple tertiary referral centers in Korea. Descriptive statistics were used for demographics and perioperative variables. Survival and recurrence were estimated with Kaplan-Meier analysis. Logistic regression models were used to determine predictors of recurrence.

Results: Median follow-up was 33 months (interquartile range [IQR]: 7–50). The numbers of patients with organ-confined and lymph node (LN)-positive disease were 237 (68.4%) and 68 (19.7%), respectively. LN density (1–20 versus > 20) was 13.6% and 6.1%, with a median of 17 nodes removed (IQR: 9–23). In logistic regression analysis, type of LN dissection and pathologic tumor stage were significant predictors of cancer recurrence and death from cancer. Local, distant recurrence and secondary UC occurred in 7 (2.0%), 53 (15.3%), and 4 (1.2%) patients, respectively. The 5-year overall survival, cancer-specific survival, and recurrence-free survival (RFS) were 78%, 84%, and 73%, respectively. At last follow-up, RFS for extended pelvic LN dissection versus standard pelvic LN dissection was 70% and 47% ($P = 0.038$). In addition, at last follow-up, LN density (0 vs. 1–20 vs. over 20) was 67%, 41%, and 29%, respectively ($P < 0.001$).

Conclusion: Patients undergoing RARC in this multi-institutional cohort demonstrated intermediate-term oncologic outcomes, predictive factors for recurrence, and recurrence patterns that were not unusual.

MP-03.19

A Modified Ileo Conduit Tecnique to Avoid Ureteroenteric Stricture

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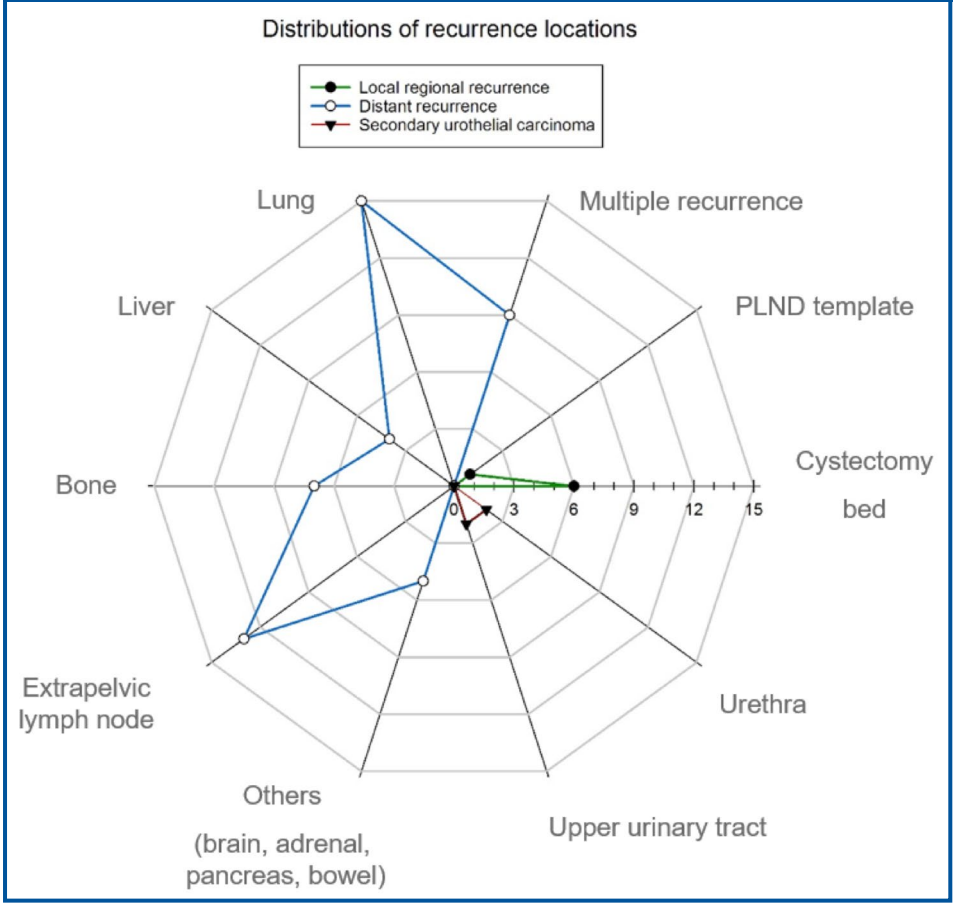
Introduction and Objective: Despite the popularity of continent urinary diversion and neobladder recostruction, radical cistectomy with ileal conduit urinary diversion remains the most commonly performed curative surgical treatment option for invasive bladder cancer. Commonly, the ileal conduit is created using a 15-20 cm ileum length. The distal left ureter passage under mesosigmoid previous its extensive dissection, in order to allow a tension-free ureteroileal anastomosis, often leads to a compromised blood supply to the left ureter, resulting in a higher incidence of delayed ischemic damage of the distal ureter, wich is the most common cause of ureteroenteric stricture. In literature, ileoureteral stricture rate reported is 1.7-14%, being more common on the left side. Of some interest is the fact that no significant diferrence is been reported in strictures occurrance rate between Bricker anastomosis type and Wallace type. The strictures resulting from urinary diversion are difficult to treat, have a high risk of recurrence and may lead to renal function deterioration. We presented our results with a modified ileal conduit tecnique (MICT) and left ileoureteral anastomosis aimed to prevent uretero-ileal anastomosis stricture.

MP-03.18, Figure 1. Distribution of Locations among Patients with Recurrence after Robot-Assisted Radical Cystectomy



Materials and Methods: We prepared an ileal tract of 20 cm medium lenght. The proximal end of the ileal conduit tract was brought on the left side through the mesosigmoid and was fixed to the parietal peritoneum, to avoid an extensive dissection and mobilization of the left ureter and to perform a tension free anastomosis. On the right side, we performed a classical Bricker ureteroileal anastomosis, while on the left side the ureter was sutured directly to the end of ileal conduit, according to our modified ureteroileal anastomosis in Y shape ileal neobladder. Between 2001 and 2010, 98 consecutive patients underwent to radical cistectomy with ileal conduit diversion with Bricker anastomotic tecnique; from 2011 to 2015, 46 consecutine patients underwent to new tecnique.

Results: The MICT was easily performed in all cases, leading to neither intraoperative nor postoperative complications, without increasing intraoperative time. The ileoureteral stricture rate was 9.1% (8/98 patients, 1/8 patients with bilateral stricture) in the traditional tecnique; no patient had ureteral stricture with the modified tecnique.

Conclusion: Our preliminary experience with the MICT is very encouraging; further randomized studies with a larger series are needed to confirm our results.

MP-03.20

The Incremental Value of an Established Enhanced Recovery after Surgery Protocol Post Open Radical Cystectomy

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Introduction and Objectives: This study determines the added clinical value of enhanced recovery after surgery (ERAS) in open radical cystectomy (ORC) in primary bladder cancer.

Materials and Methods: Between August 2013 and December 2016, all consecutive patients who underwent ORC and managed by ERAS were identified. For historical control, those who underwent ORC and managed with conventional post-operative protocols (CS) were identified. Those with follow-up period of less than 40 days were excluded. Elements of the ERAS protocol include permitting clear feeds two hours before surgery, no pre-operative mechanical bowel preparation, early removal of nasogastric tube, early feeding, deep vein thrombosis prophylaxis, use of anti-emesis, minimal post-operative antibiotics and early ambulation.

Results: We identified n=30 patients, none excluded, comprising n=15 each in CS and ERAS cohorts. The median age (years) was CS: 66 (mean 64.2 range51-75) and ERAS: 67 (mean 66.3, range51-75) (p-value 0.39). There were 12 (80%) male patients in CS and 11 (73%) in ERAS. The pathological stage: pT1 or less (CS:3, ERAS:5), pT2 (CS:5, ERAS:3), pT3 (CS:5, ERAS:6) and pT4 (CS:2, ERAS:1) (p-value 0.62). Urinary reconstruction comprised orthotopic bladder substitute (CS:4, ERAS:2) and ileal conduit (CS:11, ERAS:13). The rate of complications rated Clavien-Dindo ≥3: CS:1(6.7%) and ERAS:1(6.7%). The median estimated blood loss (ml) was CS:500 (mean 625, range 200-2000) and ERAS:700 (mean 860, range 500-3000) (p-value 0.09). The median time of ileus (defined as time to tolerate solid food) (days) was CS:5 (mean 5.8, range 3-9) and ERAS:4 (mean 4.4, range 3-6) (p-value 0.01). The median length of stay (LOS) (days) was CS:10 (mean 13, range 6-39) and ERAS:7 (mean 8, range 6-16) (p-value 0.01). Re-admission rate was CS:5 (33.3%) and ERAS:3 (20%) (p-value 0.41). Re-admissions accounted for additional (days) CS:23 and ERAS:8. Using Ministry of Health Singapore published S$2,788/day cost in a surgical ward, the average cost per patient is S$40,426(CS) and S$23,698(ERAS), inclusive of readmission episodes. Adoption of ERAS is associated with reduction of S$16,728 per patient per encounter.

Conclusion: ERAS is associated with statistically significant reduction in ileus time and hospital stay. It promotes faster recovery and reduces overall healthcare cost, without compromising patient safety or readmission rates.

Moderated ePosters Session 4 Sexual Function & Dysfunction

Friday, October 20
1605–1735

MP-04.01

Impact of Polymorphisms in the Oestrogen Receptors Alpha and Beta (ESR1, ESR2) Genes on Risk of Vasculogenic Erectile Dysfunction

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Introduction and Objectives: Erection is principally a vascular phenomenon. Oestrogen affects the vascular system in various ways. Oestrogen effects are mediated by oestrogen receptors (ERs).

Materials and Methods: We examined the relationship of two polymorphisms in ESR-a (ER-1) (rs2234693 and rs9340799) and two polymorphisms in ESR-b (ER-2) (rs4986938 and rs1256049) with risk of vasculogenic erectile dysfunction (VED). The rs2234693 (ER-a PvuII), rs9340799 (ER-a XbaI), rs4986938 (ER-b AluI) and rs1256049 (ER-b RsaI) were genotyped using polymerase chain reaction-restriction fragment length polymorphism technique. Serum levels of sex hormone-binding globulin (SHBG), total testosterone, free testosterone (fT), total oestradiol (E2) and free oestradiol (free E2) were also measured. A total of 266 men with VED and 532 healthy controls were recruited into this study.

Results: The ER-a PvuII C allele (OR = 4.2; 95% CI: 2.79–8.43, p = 0.001), ER-a XbaI A allele (OR = 4.87; 95% CI: 2.75–8.64, p = 0.001), ER-b RsaI A allele (OR=0.37; 95% CI: 0.24–0.66, p = 0.001) and ER-b AluI A allele (OR = 0.29; 95% CI: 0.16–0.57, p = 0.001) were significantly associated with VED. Subjects with ER-a PvuII CC and ER-a XbaI AA genotypes had highest serum levels of E2, and subjects with ER-b RsaI AA and ER-b AluI AA genotypes had lowest serum levels of E2. Patients with lower serum levels of E2 had more sever VED and more mixed vascular type VED. In haplotype analysis, PvuII C–XbaI A increased the risk of developing VED by more than eightfold, in contrast, RsaI A–AluI A haplotype had protective effect (OR = 0.53; 95% CI: 0.34–0.76, p = 0.002).

Conclusions: The ER-a and ER-b gene polymorphisms and haplotypes are associated with presence, type and severity of VED.

MP-04.02

The Role of Androgen Receptors in Erectile Dysfunction Due To Diabetes Mellitus: An Experimental Study

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Introduction and Objectives: Diabetes mellitus (DM) is one of the world's most important health problems. With innovations in the treatment of DM has increased life expectancy and late complications began to be seen more often. Erectile dysfunction (ED) is one of the important late complications of DM. There are common factors in the pathogenesis of both diseases. We aimed to investigate the role of serum total testosterone levels and androgen receptors (AR) in diabetic rats with ED based on common pathogenesis.

Materials and Methods: In line with ethics committee approval, we used 8 rats in the control group, 8 rats in DM group and 8 rats in castration group. In the control group (Group 1) rats were formed entirely healthy male rats. In the DM group (Group 2), DM was induced by streptozotocin injection. In castration group (Group 3), rats underwent bilateral orchiectomy. In all groups, weight, serum total testosterone (TT) level and intracavernosal pressure, mean arterial pressure ratios (ICP / MAP) was measured. Rats were sacrificed at the 3rd week of the study in Group 1, at the 3rd week of castration in Group 3 and at the 6th week of the DM formation in Group 2. After that, pancreas, prostate, corpus cavernosum and testicular tissue was dissected and immunohistochemical staining for AR examination was performed (Figure 1) Data was calculated as the median ± standard deviation and minimum-maximum values. One way ANOVA, Bonferroni post-hoc analysis was used.

Results: The median serum TT levels for Group 1, 2 and 3 were 2.5 ± 0.92; 0.46 ± 0.17 and 0.1 ng / ml respectively. Groups 2 and 3, serum TT levels was significantly lower compared with Group 1 ($p < 0.01$). No statistically significant difference showed between Group 2 and 3 ($P = 0.41$). AR expression is compared between Group 1 and 2; no changes in the corpus cavernosum and the prostate, and Group 2 shows increased expression in pancreas langerhans islets and decreased expression in the testis were found. Group 3 showed weak expression in all tissues.

Conclusions: Our study is an important study as it is made based on common pathogenesis at the hormone and receptor levels of ED and DM unity. Decreasing AR expression in testicular tissue, explains the decreased levels of TT. On the other hand, no change of the cavernosal AR expression, suggests that DM-related ED may occur more hormonal reasons.

MP-04.03

Co-Relational Study of Internet Pornography Exposure with Sexual Addiction and Erectile Functions in Korean Adult Men

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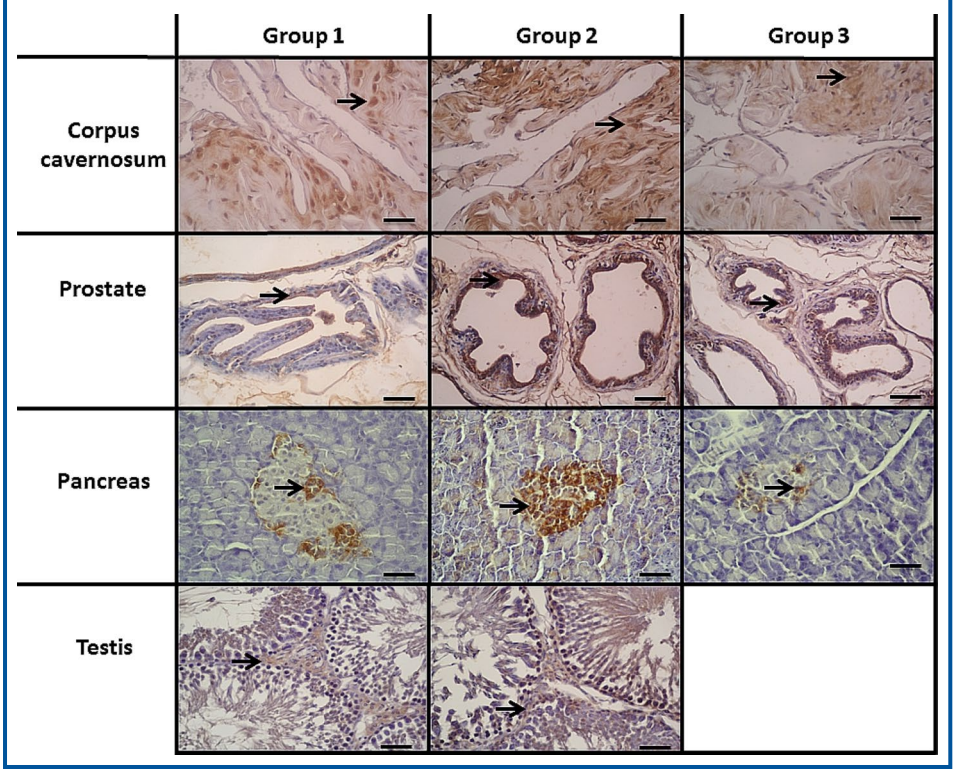
Introductions and Objective: Excessive use of internet pornography is associated with negative marital relationship, interpersonal isolation, psychological distress and other problems. The aims of this study was to evaluate characteristics of sexual behaviors in Korean men according to severity of exposure to in-

MP-04.02, Figure 1. Androgen Receptor Immunohistochemical Staning of Group 1, 2 and 3



ternet pornography (IP) and relation to consumption of IP with sexual addiction and erectile functions.

Materials and Methods: Four hundred five men who experienced IP were administered with structured questionnaires via on-line survey. The age range was 20 to 65 years who had the same partners for at least 6 months. The questionnaire consisted of 46 questions which had six categories including factors related with exposure to IP, changes in sexual behavior after habitual exposure to IP, screening questionnaire for sexual addiction and short screening questionnaire for sexual function.

Results: The results demonstrated that frequency of masturbation and non-ethical extra-marital sex increased significantly when they were exposed to IP at an early age and more frequently or longer-period to IP. The prevalence of sexual addiction was 28.6%. Sexual addiction was significantly related to high frequencies of masturbation and extra-marital sex, but significantly related to less normal marital sex after exposure to IP. Multivariate analysis revealed that more frequent (over once per week) and longer-period exposure (over 30 minute per time) to IP showed 2-fold and 4.2-fold increase in terms of development of sexual addiction, respectively. The prevalence of erectile dysfunction (ED) was 23.5%. Men with ED tended to have less normal marital sex but had more masturbation, more extra-marital sex and more sexual chatting on the screen than men without ED. Multiple regression analysis revealed that all characteristics of the men exposed to IP did not affect sexual function, but frequent exposure (over once per week) to IP tended to decrease erectile function (p=0.056). Also sexual addiction was significantly correlated with ED in men (p=0.016).

Conclusions: In conclusion, men who were exposed more frequently or longer to IP developed more sexual addiction, which resulted in inducing frequent masturbation, frequent non-ethical sexual activity and ED in men, and ultimately, negative consequences in marital relationships.

MP-04.04

Simplification of the Rat Model for the Study of Erectile Function

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Introduction and Objective: Stimulation of the cavernous nerve (CN) and the recording of intracavernous pressure (ICP) is a method that has been used for a long time to investigate the etiology and possible treatments of erectile dysfunction. The methods used vary between laboratories, making the comparison between results difficult. The goal of this study was to describe a reproducible experimental set up and suggest/introduce modifications to improve reproducibility.

Materials and Methods: Surgery was performed as described in the literature with two modifications: simplified cavernous body exposure, and isolation of the CN, using biocompatible silicon glue. A vertical 1.5 cm skin incision was made next to the base of the penis. Palpation of ischial tuberosity was used to locate the distal portion of the crus with minimal dissection. After CN exposure, a 9-0 suture was placed underneath to help place the electrode under the nerve. After elevating the nerve and drying the area, glue was applied and the nerve was kept elevated for 1 minute.

Results: Using the lowest stimulation parameters described in literature, 1.5 mA, 16 Hz, 6 V, and 5 ms pulse width, we achieved a constant pressure increase 25 times in a row with <15 mmHg stimulation-to-stimulation variability and no trend toward a diminishing response. We performed the procedure both under isoflurane and ketamine/midazolam anesthesia and showed that the depth of anesthesia has a profound effect on ICP, with a difference of 34 mmHg when using 2.5% or 1.25% isoflurane. When different stimulation parameters were used, we observed the same results with the voltage ranging from 6-10 V. A frequency of <14Hz prolonged time to pressure peak. A 15 mmHg decrease was observed in the ketamine anesthetized animal when the oxygen mask was removed.

Conclusion: The dissection of the crus and line placement takes less than 15 minutes with minimal tissue injury. Isolation of the nerve-electrode complex guarantees reproducible results. Increasing voltage to >6 V does not result in increased ICP. Depth of anesthesia is important and could be better controlled with inhalation anesthesia. It is important to use oxygen through a nose cone to prevent hypoxia.

MP-04.05

Rectal Injury during Laparoscopic Radical Prostatectomy: How to Notice, How to Manage

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Introduction and Objective: Although laparoscopic radical prostatectomy is a standard procedure, rectal injury is always a potential complication with an incidence of 0.51 to 9% according to the literature. We review the incidence of rectal injuries at our institution in the first 650 consecutive laparoscopic radical prostatectomies, pointing on how to notice and how to manage them.

Materials and Methods: Thirteen (2%) out of the 650 laparoscopic radical prostatectomies performed between March 2002 - May 2016, were complicated by rectal injury. Mean patient age was 63.3 years (range 51 to 71) and mean prostate specific antigen was 6.67 ng/mL (range 1.5 to 12.4). Median preoperative Gleason score was 6 (range 5 to 7) and pathological extracapsular extension (T3a) was present in 2 patients, being the remaining tumors organ-confined. Mean prostate volume was 41.5cc (25-66cc).

Results: In 8 patients (61.5%), rectal injury was recognized intraoperatively and primarily repaired, and 5 postoperatively (rectal integrity was not checked during prostatectomy).The integrity of the rectum was controlled intraoperatively by rectal insufflation of air in the saline filled pelvic cavity. If rectal injury was recognized intraoperatively, 2-layer closure and forced anal dilatation were performed; antibiotic treatment with gentamicine and metronidazol were administrated and clear liquid diet for 7 days. No gross fecal contamination was identified at the time of the injury at any case, probably due to the bowel preparation before radical prostatectomy with enema. Among the 8 cases of primarily repaired, 7 patients (87.5%) healed without need of colostomy while one developed a recto urinary fistula, and required colostomy at the tenth day. Recto-urinary fistula was evidenced by pneumaturia and faecaluria in the remaining five patients. These patients were successfully managed conservatively with diverting colostomy and urethral catheterization at least during 30 days. One patient required secondary fistula repair by transphincteric transanal surgical approach (York Mason). Primary closure does not appear to affect continence recovery.

Conclusion: Rectal injury during laparoscopic radical prostatectomy should be recognized and managed intraoperatively, as rectal wall closure in two layers is essential for a successful repair, accelerating patient recovery, minimizing the need of colostomy and postoperative complications (including functional outcomes).

MP-04.06

A 10-Year Interval Study about the Sexual Life and Attitudes in Korean Women

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Introduction and Objective: We evaluated the changing trends of the female sexual life and attitudes in Korea. We conducted an Internet based survey at 10 year intervals.

Materials and Methods: We perform a 10-year interval study to investigate changing trends of the female sexual life and attitudes through the Korean Internet Sexuality Survey (KISS) 2014. The internet-based survey was targeted towards 20~59-year-old women, who were asked to answer the questionnaire only if they were sexually active. The result of 2004 study was analyzed again to compare with the result of 2014.

Results: A total of 516 of 50,000 women were contained in the study, the response rate is 16.0%. The mean frequency of intercourse (FOI) per month was 3.46 ± 2.56 in 2014, while 5.34±3.84 in 2004. In age subgroups, it was decreased from 5.67 ± 4.13 (2004) to 3.52 ± 2.27 (2014) in 20s (P-value < 0.001), and from 5.31 ± 3.58 (2004) to 4.18 ± 3.25 (2014) in 30s (p=0.004). No significant difference between was found in age of 40. The risk factors for reduced FOI were found being old, being single, having dyspareunia in common. Most Korean women had positive attitude towards sex (3.2 ± 0.6 out of 5) and considered it as important (3.3 ± 0.7 out of 5) alike 2004. However, women aged from 20 to 39 had less positive attitudes towards sex than in the past decade. Women in forties were more active and had more conversation with their partner. Among the women on contraception, 63.8% were found to use less effective methods, such as intercourse withdrawal and fertility awareness method.

Conclusions: In comparisons with 2004 survey, young Korean women had fewer sexual relationships and took less positive attitude towards sex. And still many women used less effective contraceptive methods.

MP-04.06, Table 1. Demographic and Clinical Characteristics of Participants in the Study of 2014 Compared to 2004

		2004 (N=460)		2014 (N=516)	
Characteristics		**No.**	**(%)**	**No.**	**(%)**
Age Group	20-29	253	55.0	131	25.4
	30-39	170	37.0	141	27.3
	40-49	37	8.0	144	27.9
	50-59	N/A		100	19.4
BMI	BMI<25	438	95.2	488	94.6
	BMI≥25	22	4.8	28	5.4
Marital status	Single	179	38.9	148	28.7
	Married	281	61.1	368	71.3
Occupations	Housewife	175	38.0	308	59.7
	Office worker	122	26.5	96	18.6
	Student	50	10.9	61	11.8
	Commerce	12	2.6	17	3.3
	Self-employed	11	2.4	11	2.1
	Unemployed	12	2.6	8	1.6
	Etc	78	16.9	15	3.0
Income *	Low	179	38.9	84	16.3
	mid-Lower	131	28.5	159	30.8
	mid-Upper	122	26.5	185	35.9
	High	28	6.1	88	17.1
Smoking history	Present	55	12.0	59	11.4
	absent	405	88.0	457	88.6
Alcohol drinking	Yes	299	65.0	308	59.7
	No	161	35.0	208	40.3
Contraceptive intention	Yes	317	68.9	444	86.0
	No	143	31.1	72	14.0
Pregnant history	Present	253	55.0	390	75.6
	Absent	207	45.0	126	24.4
Academic background	Middle school	1	0.2	2	0.4
	High school	130	28.3	137	26.6
	College (in/graduate)	301	65.4	368	71.3
	Graduate school	28	6.1	9	1.7
Medical history	Present	268	58.3	365	70.7
	Absent	192	41.7	151	29.3
Frequency of intercourse	<once a week	258	56.1	442	85.7
	≥once a week	202	43.9	74	14.3

* Criteria based on Governmental revised tax bill, Aug. 2013

MP-04.06, Table 2. Prevalence of Contraceptive Methods Used Among Korean Women in the Study of 2014, No. (%)

		FAMs (rhythm)	Withdrawal (pull-out)	Pills	Condom (Male)	Sterilization (Male)	Sterilization (Female)	IUD	Etc
Number of women on contraception									
	2004 (N=357)	97(27.2)	162(45.4)	30(8.4)	132(37.0)	37(10.4)	11(3.1)	19(5.3)	8(2.2)
	2014 (N=440)	87(19.8)	267(60.7)	44(10.0)	48(10.9)	5(1.1)	29(6.6)	1(0.2)	3(0.7)
Age Group (of 2014)	20-29	30(27.0)	64(57.7)	14(12.6)	13(11.7)	-	-	-	1(0.9)
	30-39	34(28.6)	67(56.3)	13(10.9)	17(14.3)	1(0.8)	1(0.8)	-	1(0.8)
	40-49	23(17.3)	81(60.9)	11(8.3)	11(8.3)	1(0.8)	18(13.5)	1(0.8)	1(0.8)
	50-59	-	55(71.4)	6(7.8)	7(9.1)	3(3.9)	18(23.4)	-	-
Number of women who use only one method of birth control									
	2004 (N=212)	25(11.8)	53(25.0)*	10(4.7)	54(25.5)*	34(16.0)	11(5.2)	19(9.0)	6(2.8)
	2014 (N=381)	68(17.9)	220(57.7)*	30(7.9)	30(7.9)*	3(0.8)	27(7.1)	-	3(0.8)

- **FAMs:** Fertility Awareness-based Methods, also called natural family planning, that is way to track ovulation in order to prevent pregnancy
- **IUD:** Intrauterine Device
- **Pleural response was permitted in the question of contraceptive methods**

***:** Pearson correlation significant at p<0.001

MP-04.06, Table 3. Regression Analysis on the Risk Factors Related to Decreased Frequency of Intercourse

Risk factors (2004)	Univariate analysis		Multivariate analysis	
	OR(95% CI)	P value	OR(95% CI)	P value
Age	0.97(0.94-1.00)	0.063	0.93(0.89-0.97)	0.001
Married	2.80(1.88-4.17)	0.000	4.39(2.60-7.43)	0.000
Contraceptive intention	1.01(0.68-1.50)	0.967	-	-
Gravidity	1.21(0.95-1.54)	0.128	-	-
Attitudes towards sex				
Putting value on sex	1.82(1.39-2.38)	0.000	-	-
Talking to partners	1.82(1.46-2.26)	0.000	1.53(1.20-1.96)	0.001
Female sexual function index				
Desire	1.45(1.11-1.90)	0.007	1.50(1.18-1.90)	0.001
Pain	1.22(0.97-1.53)	0.089	1.29(1.05-1.58)	0.015
Vaginitis	2.74(1.45-5.17)	0.002	2.39(1.20-4.76)	0.013
Risk factors (2014)	**Univariate analysis**		**Multivariate analysis**	
	OR(95% CI)	P value	OR(95% CI)	P value
Age	0.99(0.97-1.01)	0.989	0.95(0.91-1.00)	0.038
Married	2.30(1.20-4.40)	0.012	6.02(2.36-15.33)	0.000
Contraceptive intention	1.04(0.51-2.14)	0.906	-	-
Total number of partners in life	1.36(1.14-1.62)	0.001	1.35(1.05-1.72)	0.018
Masturbation rate	1.43(1.00-2.03)	0.050	-	-
Age of menarche	1.88(1.52-2.33)	0.000	1.73(1.32-2.28)	0.000
Overactive Bladder Symptom Score				
Frequency	0.41(0.20-0.85)	0.016	-	-
Nocturia	2.25(1.37-3.68)	0.001	-	-
Beck Depressive Inventory	1.04(1.01-1.07)	0.022	1.06(1.00-1.12)	0.035
Female Sexual Function Index				
Arousal	0.38(0.15-0.98)	0.046	-	-
Orgasm	4.66(2.52-8.64)	0.000	2.72(1.22-6.07)	0.015
Satisfaction	1.95(1.01-3.75)	0.046	-	-
Pain	1.28(0.73-2.25)	0.000	2.59(1.31-5.11)	0.006
Attitudes towards sex				
General perception	2.36(1.51-3.68)	0.000	-	-
Putting value on sex	2.08(1.39-3.12)	0.000	-	-

- OR: Odds Ratio, CI: Confidence interval
- Variables of significant at p-value > 0.05 were excluded

MP-04.07

Sexual Function Outcomes in Patients and Patients' Spouses after Midurethral Sling Procedure for Stress Urinary Incontinence: Data from A Minimum of 3 Years of Follow-Up

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Introduction and Objective: The midurethral sling (transobturator tape [TOT]) procedure has been widely performed for treatment of urinary incontinence; however, little has been reported regarding sexual function after surgery. Our previous study reported sexual function in couples after TOT procedure. In this prospective study, we investigated the sexual function follow-up outcomes in these patients and their spouses.

Materials and Methods: Between September 2012 and June 2013, 65 patients undergoing TOT and their sexual partners were enrolled. The validated self-administered questionnaires, Female Sexual Function Index (FSFI) and satisfaction domain of the Male Sexual Health Questionnaire (MSHQ), were used to evaluate the couples' sexual function. They completed the questionnaires before the procedure, at 3, 6, and 12 months after the procedure and every year for 3 years.

Results: Of 65 couples, 48 couples completed this study. The mean ages of the patients and their partners were 44.7 ± 5.8 and 47.2 ± 6.1 years, respectively. The mean follow-up period was 38.4 ± 2.4 months. A significant decrease in the total FSFI score was observed at 3 postoperative months (P = 0.003), which recovered at 6 postoperative months. A significant improvement was observed in the total FSFI score from baseline to 36 postoperative months (P < 0.001). There were significant improvements in desire, arousal, orgasm, and satisfaction in the FSFI domains (P = 0.014, 0.011, 0.015, and < 0.001, respectively). For the male partner, there was no statistically significant correlation between 12 and 36 postoperative months although the MSHQ satisfaction domain scores tended to increase over the long-term follow-up.

Conclusion: Over 3 years of follow-up, the outcomes suggest that sexual satisfaction for patients and their partners improved following the TOT procedure, and was relatively well maintained.

MP-04.08

The Mediterranean Diet Ensures a Good Sexual Health More than the Levels of Physical and Mental Health

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Introduction and Objectives: The lifestyle and the Mediterranean diet are protective factors against cardiovascular disease even though they lack a clear correlation with erectile dysfunction (D.E.). Some evidence, however, exists between D.E. and depression. We analyzed the correlation between D.E., physical activity, adherence to the Mediterranean diet and depressive symptoms.

Materials and Methods: We subjected to 67 patients referred for surgery, the questionnaire IIEF 15 (International Index of eréctil Function), the questionnaire Hamilton for major depression, the Med-Diet Questionnaire, Questionnaire Ipaq (International Index of Physical Activity) and calculated the BMI (Body Mass Index). We excluded patients with a history of cigarette smoking, diabetes, hyperlipidemia, cardiovascular disease and age > 65 and <40 years. On the basis of the presence of sati D.E they are divided into two groups and calculated by means of the student t and through the chi2 statistical differences between the scores. As post hoc analysys we correlated the levels of physical activity, BMI and adherence to the Mediterranean diet with depression.

Results: The average age was 64.3 years (40 ± 72). The average BMI was found to be 27.23 (20 ± 29). The D.E.ha group shown at t student a statistically significant difference in BMI compared to the group with normal erectile function. The statistical analysis of the Med-Diet showed the t student a statistically significant difference between the two groups <0.0001 (p <0.05) as the chi2p <0.001 (yates p <0.0049; od = 0.02). The Ipaq showed no statistically significant differences between the two groups (t-student p = 0.732; chi2yates = 0.866; o.d. = 1.4). The Hamilton test showed no statistically significant correlation between the two groups (Student t = 0.44; chi2yates = 0.14; o.d. = 1.7). The intense physical activity (> 2520 meth), BMI <25 and a strong adherence to the Mediterranean diet (≥10) have shown a protective effect against depression (chi2 p = 0.03)

Conclusions: The body weight and a healthy diet are protective factors against the erection disorder. The psychic was intended as the presence of depressive symptoms and physical activity showed only a strong tendency to be respectively worsening and protective factors against the D.E. but they did not reach significance, in our sample. The Mediterranean diet, a regular body weight and physical activity have been shown to protect against the onset of depression.

MP-04.09

Testicular Growth in Down Syndrome

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Introduction and Objective: Down syndrome (DS) is a genetic disorder usually caused by an extra copy of chromosome 21. This syndrome causes delays and limitations in physical and intellectual development. Clinical signs are mental deficiency, constitutional disorders, cardiac and gastrointestinal malformations, endocrine dysfunctions, and abnormal sexual developments. Abnormal sexual developments include cryptorchidism, small testes, micropenis and infertility. We have already reported that in male DS patients, serum luteinizing hormone and follicle stimulating hormone levels were significantly high and the testosterone level tended to be low. Testicular volume (TV) was significantly smaller in boys with DS compared to normative values. We are investigating the testicular growth progress in DS patients.

Materials and Methods: In the past 14 years (from 2002 to 2016), testicular ultrasounds were performed in 22 males with DS. The patients' age ranged from 2 to 68 years old. External genitalia were normal among those 22 male patients. TV was measured according to the formula, 0.71× length × width × height.

Results: In our study, at the age of nine, TV was 1.1ml, smaller than that of healthy Japanese boys (2.2ml). At the age of 20, TV reached its peak, 7 to 8ml in DS patients (Japanese boys without DS 17.2ml). After that TV tended to atrophy in DS patients.

Conclusion: Though testes in DS patients grew slowly until the age of 20, they gradually became smaller after 20 years old. Intracranial senile changes (dementia, brain atrophy, Alzheimer Disease etc.) are known to appear at an early age in individuals with DS. This study indicates that testicular senile changes also begin in the early twenties among DS patients.

MP-04.10

Intracavernous Administration of Adipose Stem Cells: A New Technique of Treating Erectile Dysfunction in Diabetic Patient, Preliminary Report of 6 Cases

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Introduction and Objectives: After revolutionized treatment of ED with PDE5 inhibitors, approximately 30% of patients are non-responsive. An important cause of this is vascular and smooth muscle dysfunction, as well as nerve atrophy. Stem cells are characterized by anti-inflammatory activities, as well as possibility of differentiating into tissue relevant to the penile architecture, and stimulation of angiogenesis. We report the effects of intracavernosal application of adipose stem cells (ASC) on diabetic erectile dysfunction.

Materials and Methods: Six type 2 diabetics who had failed to achieve an erection for at least 6 months despite medications, and who are currently awaiting penile prostheses, participated in this study. All laboratory results were normal, except for erectly dysfunction and diabetes mellitus. A total of 1.5 x 10(7) adipose stem cells was infused into the corpus cavernosum. No immunosuppressive measures were taken in any of the patients. International index of erectile function-5, Encounter Profile Question 3 (SEP3), GAQ, erection diary, blood glucose diary, and medication dosage were followed for 6 months.

Results: The mean age was 63.7 years (range, 55-81 years). Morning erections were recovered in 4participants within 2 month, and for all except 1 by the 95 days, and maintained for more than 4 months. Rigidity increased as the result of stem cell therapy alone, but was insufficient for penetration. With the addition of PDE5 inhibitor before coitus, 3 achieved penetration and experienced orgasm, and maintained for more than 6 months. All but 1 reported increased desire. During follow-up, 1 returned for prosthesis, 1 returned to a nonerectile condition at 7 months, and 4 maintained erections sufficient for coitus with medication until the 9th month. Blood glucose levels decreased by 2 weeks, and medication dosages were reduced in all. Glycosylated hemoglobin levels improved after treatment.

Conclusions: Human adipose stem cell therapy has positive effects on erectile dysfunction in diabetes mellitus patients. Stem cells mediate mechanism may contribute to these positive effects.

MP-04.11

Use of Topical Prostaglandin in Post Radical Prostatectomy Sexual Rehabilitation

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Introduction and Objectives: The aim of the study is the evaluation of the efficacy and safety of treatment through the use of Topical prostaglandin (Vitaros) on-demand in post radical prostatectomy patients.

Materials and Methods: Before radical prostatectomy 74 patients were enrolled after collecting appropriate informed consent to participation in the study. Inclusion criteria were age <75 years, preoperative IIEF 15> 16, preoperative rigidometry ≥2, preoperative weekly sexual intercourse ≥1, affirmative answers to sep q2 and sep q3, Charlson ≤5, ECOG ≤1, preoperative QQL ≤2, absence of metabolic syndrome and moderate / severe cardiovascular disease. One month and four months after surgery were administered tests: sep q2, sep q3, gag q1, gag q 2, qql, rigidometry and IIEF 15. One month after surgery patients began treatment with topical alprostadil (Vitaros) ≥2 times a week and at fourth month tried injection therapy with alprostadil (Caverjet)

Results: One month after surgery in absence of any therapy, no patient had erection or had completed sexual intercourse. Patients began therapy with topical prostaglandin on demand ≥2 times a week. At 4th monts after surgery the IIEF 15 decreases from an average of 17.9 preoperative to 17.2 postoperative. The rigidometry and decrease from an average of 3.5 preoperatively to an average of 3 postoperatively. The QQL increased from an average of 1.7 preoperative to an average of 2.3 postoperative. The number of weekly sexual intercourse 'increased from an average of 1.5 preoperative to an average of 2.3 postoperative. 87.5% of patients responded positively to sep q2 and 75% responded positively to the question sep q2. All patients responded positively to gaq q1 and 90% to gaq-q2. Three patients dropped out from the study: 1 for absence of partners, 1 for risk of urethral stenosis, 1 for severe pain during injection). Of all patients only 13 have switched to injection therapy (Caverjet) because more active.

Conclusions: Treatment with topical alprostadil (Vitaros) has proved a viable alternative to common injucting therapies in well-selected patients

MP-04.12

Efficacy and Tolerability of Avanafil 200 Mg Three Times a Week in Sexual Rehabilitation after Monolateral Nerve-Sparing Prostatectomy. Results after Six Months of Chronic Therapy

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Introduction and Objectives: Primary outcome of the study is the evaluation of the efficacy and tolerability of Avanafil 200 mg three times a week in patients with good preoperative sexual performance. Secondary outcomes are the evaluation of the number of preoperative sexual intercourses versus postoperative sexual intercourses and preoperative versus post operative sexual quality of life.

Materials and Methods: Preoperatively we enrolled 45 patients on the list for unilateral nerve sparing robotic prostatectomy under 75 years (mean 65.3) with preoperative Charlson Comorbidity index <1, preoperative ECOG performance status <1, Preoperative International index of erectile function (IIEF) 15 > 17, preoperative rigidometry> 2, preoperative positive answer to Sexual Encounter Profile (Sep) q2 and Sepq3, preoperative quality of Life >3. The physical examination was performed on the tenth day after surgery when patients remove the bladder catheter and begin rehabilitation with Avanafil 200 mg three times a week. Other medical examinations were established in the third and sixth month after surgery in which the tests were administered.

Results: In the third month IIEF 15 diminished from an average preoperative 18.16 to 13.12 in the third month and 15.24 in the sixth month. The average number of weekly sexual intercourse increases from 0.90 to 2.18 and remained the same in the

sixth month. The rigidometry showed an average of 3.08 preoperatively that diminished to 2.25 in the third month, and there was no difference in the sixth month. In the third month 60% answered positively to tests sep q2 and q3, no one answers negatively to gaq tests 1 and 90% replied affirmatively to gaq q2 test. At six months 90% responded positively to tests sep q2 and q3, and no one answered negatively to gaq tests. The sexual qql decreased from 1.35 to 2.65 in the third month and at 2, 17 in the sixth month. One patient stopped the treatment for severe cutaneous flushing and two for headaches after administration. Other 3 patients abandoned rehabilitative therapy Avanafil.

Conclusions: Rehabilitation therapy with Avanafil 200 mg three times a week improves erectile function and showed adverse events slightly lower than other pde 5i.

MP-04.13

Gender Reassignment Surgery: An Evaluation of Post-Operative Pain

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Introduction and Objective: We present our experience in the post-operative pain management of male to female gender re-assignment patients. Our objective is evaluating optimal post-operative pain management in gender reassignment surgery.

Materials and Methods: The prospective measurement of post-operative pain scores, as determined by a 4 point visual analogue scale, and intravenous (iv) opiate patient controlled analgesia (PCA) usage was recorded. Procedures were undertaken under general anaesthetic with pre-operative caudal epidural with 20-30ml of 0.375% bupivacaine and intraoperative local anaesthetic spermatic cord block. Post-operatively, patients received iv morphine PCA with regular paracetamol and ibuprofen.

Results: Fifty one patients who had male to female gender reassignment with penile inversion surgery, over a 9 month period were included in the study. The mean patient age was 48.3 ± 12.2 (SD). 49 patients received caudal epidural and 2 did not. Pain was extremely well controlled; 84.6% and 93.3% of pain responses, during the first and second operative days respectively, indicated no pain. Patients who had epidural had lower pain scores 2 days beyond the effective action of the epidural suggesting a pre-emptive analgesic effect. Age was inversely associated with post-operative pain scores (p=0.03) and PCA usage (P=0.03).

Conclusion: Balanced analgesia with caudal epidural provided extremely good pain relief. Post-operative PCA was most warranted, in the younger age groups.

MP-04.14

Tunica Albuginea's Area of Defect in Lengthening Corporoplasty with Small Intestinal Submucosa Graft Is a Predictor of De Novo Erectile Dysfunction

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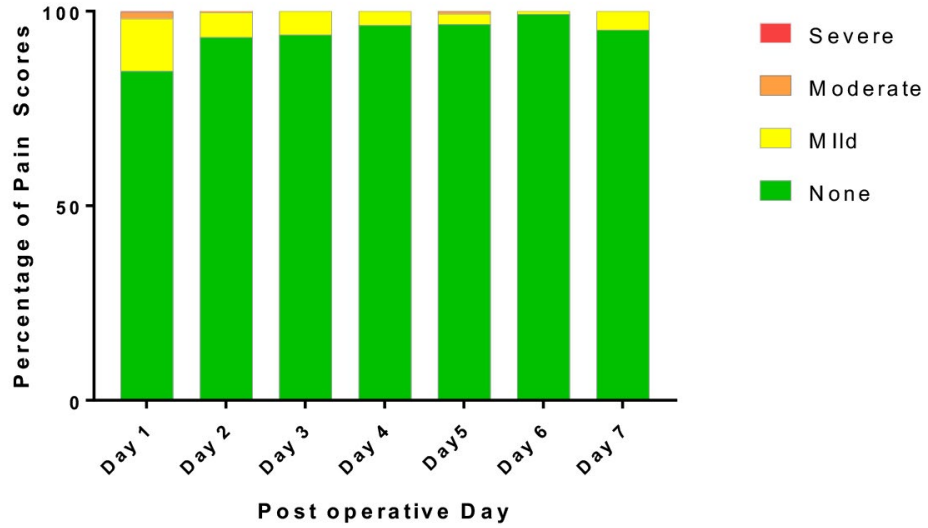
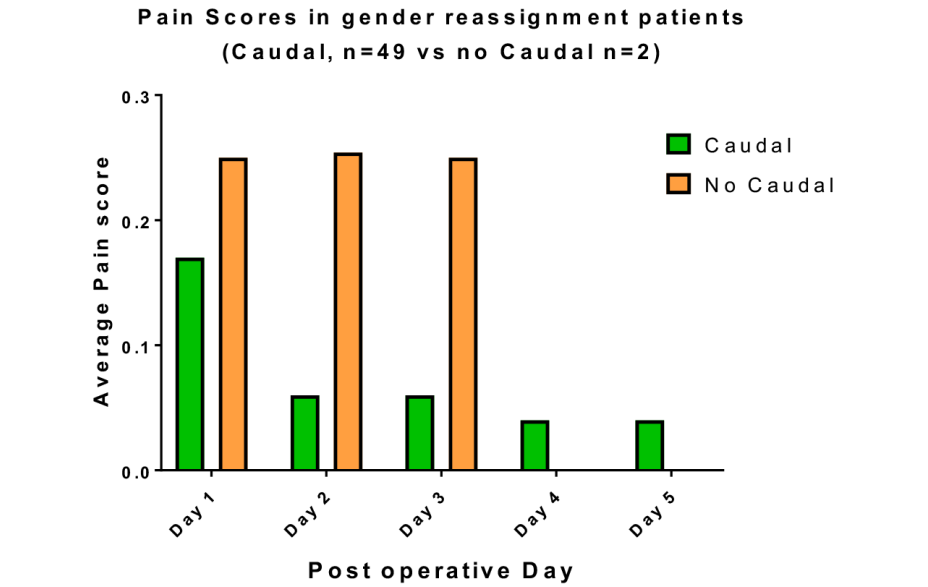
Introduction and Objective: Surgery remains the gold-standard for the treatment of Peyronie's disease (PD). Lengthening corporoplasty using a graft is the preferred procedure for severe (>60º) or complex penile curvature (PC). However, complications, such as erectile dysfunction (ED), are not unusual and may impair overall satisfaction with surgery. Four-layered porcine small intestinal submucosa graft (Surgisis®ES, Cook Medical) has been widely used in the treatment of PD. Nonetheless, de novo moderate-or-severe ED is reported by 18.8% of patients as well as by 66.7% of patients has the cause for dissatisfaction with treatment. Moreover, predictive pre-operative factors for de novo ED are lacking. Our aim was to access peri-operative data as predictors of de novo ED.

Materials and Methods: A secondary analysis of our retrospective review of 32 patients submitted to lengthening corporoplasty with Surgisis®ES grafting for PD treatment at our institution was performed. Pre-operative and peri-operative data regarding erectile function and tunica albuginea defect length, width and area were already recorded with prospective intent. Patient-reported ED was accessed through a validated questionnaire. Briefed International Index of Erectile Function (IIEF-5) was used. IIEF-5 score of 21 or less was regarded as diagnostic of ED. Patients

MP-04.13, Figure 1.

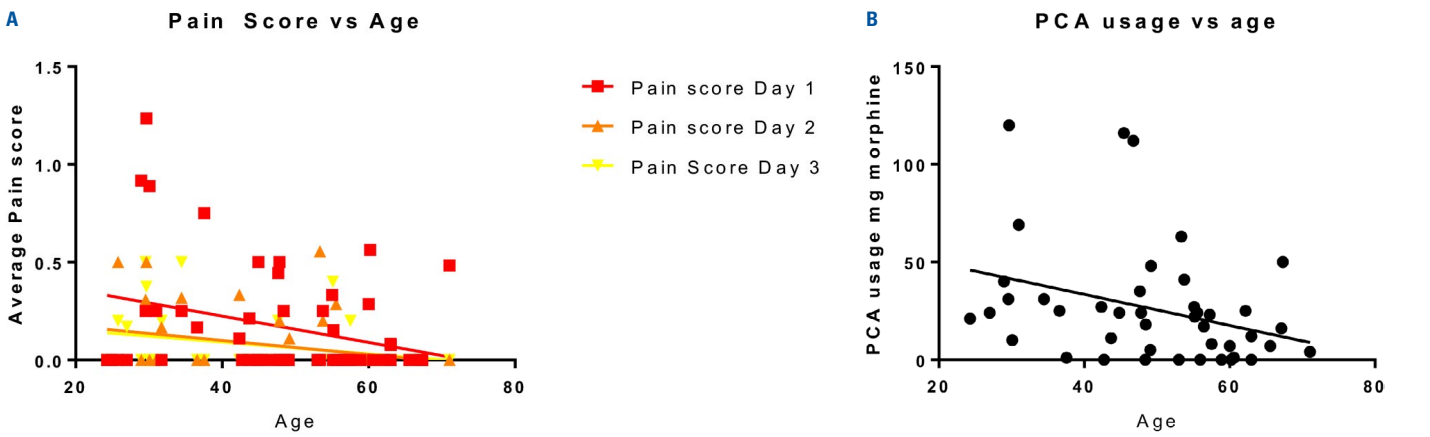


MP-04.13, Figure 2.



(Average pain score generated by coding none=0, mild =1, moderate =2, severe =3 and averaging the daily response for each patient).

MP-04.13, Figure 3.



with preoperative ED (n=7) were excluded. Pearson's correlation coefficient was used to measure strength of association.

Results: The mean patient follow-up time was 39.3 (±12.2) months, respectively. Mean peri-operative plaque defect length, width, area and median penile curvature were 5.9±1.7 cm, 2.9±0.7 cm and 17.2±6.8 cm2 and 80 (80-90) degrees respectively. De novo erectile dysfunction was present in 52.0% (n=13) patients. A median IIEF-5 score of 21 (19-24) were noted. There was a significant inverse correlation between defect length as well as area and postoperative IIEF5 (r=-0.556 and p=0.012; r=-0.495 and p=0.004, respectively). A plaque defect area cut-off of 14,375 cm2 could predict de novo ED with 76.9% sensitive and 58.3% specificity.

Conclusion: Area of defect can predict patient-reported post-operative erectile function and may be used in the future as a preoperative predictor of de novo erectile dysfunction after lengthening corporoplasty with Surgisis®ES.

MP-04.15

Experience of Penile Prosthesis Implantation in Patients Younger than 50 Years of Age

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Introduction and Objective: Although erectile dysfunction (ED) prevalence increases with increasing age, it still affects almost 10% of patients in their forties. Nevertheless, no publications to date specifically address outcomes of penile prostheses (PP) in young men. This study evaluates the outcomes of PP placement for the treatment of ED in men younger than 50 years.

Materials and Methods: A review of all men younger than 50 years who underwent PP placement for treatment of ED at a single institution by four urologists from January 1, 1990 through September 1, 2016, was performed. Clinicopathologic characteristics, perioperative outcomes and complications including reoperation were recorded. Statistical analyses were performed in Microsoft Excel 2016.

Results: Twenty-two patients younger than 50 years (mean age 38 years, range 19 to 49 years) underwent PP placement for treatment of ED during the study period. Mean follow up was 11 months. The etiology of ED was 23% (5/22) primarily organic, 23% (5/22) congenital urogenital anomaly, 14% (3/22) Sickle-cell related priapism, 14% (3/22) spinal cord injury (SCI), 9% (2/22) pelvic trauma without SCI, and 9% (2/22) prostate cancer treatment. Type of PP placed was a 3-piece inflatable PP in 55% of men, 2-piece inflatable in 9%, and malleable in 14%; 23% of patients underwent Gortex sleeve corporal reconstruction with placement of either malleable (AMS Spectra) or inflatable (AMS 700 CXR) PP. Fourteen percent (3/21) of cases of first PP placement required reoperation; 1 (5%) for erosion, 1 (5%) for impending erosion, 1 (5%) for mechanical failure. Furthermore, one case involved PP explant reimplant for a PP that had been placed at another institution; the indication for this revision was mechanical failure. One man complained of penile shortening, one man had hypermobile glans, and one man experienced initial difficulty deflating the device.

Conclusion: PP placement seems to be a safe and effective treatment for ED in younger men. The reoperation rate in this group was higher than reported in generic age groups, consistent with a high proportion of patients receiving PP for complex indications.

MP-04.16

Preservation of Shape and Length by Penile Sculptoring Over Inflatable Prosthesis in Peyronies Disease

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Introduction and Objectives: To evaluate surgical results in terms of penile length and patient's satisfaction following penile prosthesis implantation and penile straightening.

Materials and Methods: We consecutively enrolled men undergoing first-time IPP implant surgery from February 2011 to September 2016 with deformity caused by Peyronie's disease and erectile dysfunction. Surgical technique: following subcoronal incision penis was degloved and dorsal neurvascular bundle was dissected from tunica albuginea. Inflatable penile prosthesis (AMS 700 CXR) was placed in a standard way via penoscrotal incision with cylinders oversized of 1-2 cm. Prosthesis was activated and penile deformity elicited. On the convex side of the tunical albuginea on demand incisions (reaching without breaching cavernous tissue) were performed to achieve a complete correction of the curvature. Patients were discharged with prosthesis inflated for 3 weeks and thereafter instructed to daily activation. We compared erected penile length with hydraulic erection before surgery and with fully activated penile prosthesis immediately after surgery and 6 months later. EDITS was recorded before and 6 months after surgery.

Results: Eighty one patients were enrolled (median age 62). All completed 6 months' follow-up, 63 complete 12 months follow-up (77%). Median operative time was 135 min. Median number of incision performed was 3, none wider than 1 cm. A significant difference in penile length was observed between hydraulic erection and inflated penile prosthesis immediately after surgery with a mean 17% increase (+1.9 ± 0.56 cm). At 6 months, no loss in penile length was observed compared to immediate post-surgery. Mean EDITS scores before surgery at 6 months after were 52.2 ± 10.8 and 76.9 ± 12.8 respectively (p=0.0001).

Conclusions: Penile prosthesis implantation with on demand albuginea incision is an easy and valuable option to correct penile deformity and erectile dysfunction. Such approach has been generally used to correct residual deformity following penile prosthesis implantation. In our serie we showed that it is a valuable first line approach with good results in terms of penile length comparable to other techniques (e.g. patch), reduction in operative time and without significant complications.

MP-04.17

Is There a Significant Improvement of Erectile Dysfunction-Related Anxiety and Depressive Symptoms after Penile Prosthesis Implant?

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Introduction and Objective: Erectile dysfunction (ED) is a common and multidimensional male sexual disorder, which affects physically and psychosocially the patient. These symptoms, in turn, affect his partner's sexual experience and the couple's quality of life. The approach of ED must include a holistic evaluation and a tailored treatment. Surgical therapies are reserved for the subset of patients who experience adverse effects from (or are refractory to) medical therapy and those who also have penile fibrosis or penile vascular insufficiency. Our objective is the evaluation of the impact of penile prostheses on anxiety and depressive symptoms as well as the global satisfaction of the patients.

Materials and Methods: Interview with patients who underwent penile prosthesis implantation between January of 2011 and December 2015 at Centro Hospitalar do Porto, using the Hamilton Anxiety and Depression Rating Scales (HAM-A, HAM-D). Exclusion criteria comprise previous psychiatric disorders, major life events and starting anxiolytics/antidepressants after surgery. Statistical analysis was performed on STATATM13.1, through paired t-tests and Wilcoxon tests.

Results: During this period, 17 penile prostheses were implanted (two semi-rigid) and three revisions were undertaken due to mechanical failure. Due to the exclusion criteria, only 14 patients enrolled the study with 60±7 years old and 32±18 months of follow-up. Regarding the HAM-A score, there were a 53.5% reduction from baseline (p=0.01) and on the HAM-D score, a 54.3% decrease (p=0.01) was detected. At baseline, owing to ED, 36.7% had moderate-severe anxiety, whereas 81.8% had mild-moderate depression. After the procedure, at the interview, 100% had only mild anxiety and 72.7% had no depression. Global satisfaction was 91.7%. There were no significant differences adjusting for age, comorbidities and follow-up time.

Conclusion: In selected patients, penile prostheses prompt high satisfaction levels and greatly contribute to lessen ED-related anxiety and depressive symptoms.

MP-04.18

Sexual Function, Quality of Life, and Bladder Diary Assessment after Sacral Neuromodulation for Voiding Dysfunctions

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Introduction and Objective: Sacral neuromodulation (SNM) constitutes a treatment option for refractory voiding dysfunctions, such as over-active bladder syndrome (OAB) and non-obstructive chronic urinary retention (CUR), with consistent results. However, there are few studies on the impact of SNM of patients' quality of life (QoL), including sexual function. This project aims to assess the impact of SNM on the symptoms and QoL through the analysis of bladder diary (BD) and questionnaires, before and after SNM.

Materials and Methods: Prospective study involving all patients submitted to SNM between January/2012 and December/2016 at our institution by means of clinical interview, both before and 4 weeks after implantation of Medtronic Interstim II®. A BD and the following validated questionnaires were utilised: Short-Form Health Survey 36-item (SF-36); International Index of Erectile Function 15 (IIEF-15), in men; Female Sexual Function Index (FSFI), in women; and Visual Analogue Scale for pain/discomfort (VAS). The statistical analysis was performed in STATA®13.1, using paired t-tests and Wilcoxon signed-rank tests, α=0.05.

Results: During this period, 27 patients (85.2% women) were submitted to SNM. Their mean age was 50.4±14.2 years. The most frequent diagnoses were non-obstructive CUR (n=17, 63.0%), and OAB (n=7, 25.9%). In 82.4% of patients, there was progression to definitive SNM. Regarding BD, there was an adjusted significant improvement in all the main items. Specifically, in non-obstructive CUR, median daily intermittent self-catheterisations and residual volumes plummeted (4 vs. 0, p<0.01; 300mL vs. 0mL, p<0.01); in OAB, median daily frequency and pads needed dropped (15 vs. 1, p<0.05; 4 vs. 0, p<0.05). Concerning QoL, there was a significant improvement in mean SF-36 scores, both in the physical (46.2%±20.1% vs. 68.9%±15.4%, p<0.001) and in the emotional (42.6±20.8% vs. 70.5%±17.7%, p<0.001) domains. In the sexual function questionnaires, both the IIEF-15 (8.2±2.4 vs. 10.0±4.8, p=0.24) and the FSFI scores (11.5±9.7 vs. 16.4+±2.7, p=0.01) improved. Lastly, mean VAS scores significantly diminished (8.2±2.0 vs. 3.7±1.8, p<0,001).

Conclusion: SNM is an effective treatment option in refractory voiding dysfunctions, as it improves to only BD items, but also patients' QoL, including their sexual function.

Moderated ePosters Session 5 Training and Education

Friday, October 20
1605–1735

MP-05.01

Validation and Transferability of the SIMULATE Ureterorenoscopy Training Curriculum

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Introduction and Objective: The newly-developed SIMULATE curriculum for ureterorenoscopy (URS) employs the most evidence-based validated training models. The aim of this study is to assess the face, content, construct and transfer validity of the SIMULATE URS training curriculum.

Materials and Methods: Junior residents with less than 10 URS experience (n=35) were invited for training using the curriculum on three separate occasions in Manchester (n=15), Salzburg (n=15) and Hokkaido (n=5). The Manchester cohort was also given the opportunity to use fresh frozen cadavers with fluoroscopy. Participants were taught and assessed, using OSATS, by endourology and education specialists, all of whom were also invited for an evaluation survey following the training programme. Construct validity was assessed using a One-way ANOVA test to evaluate the level of progress throughout the training. Residents were followed up at their institutions and assessed for technical skills, using OSATS, and non-technical skills, using a modified NOTSS score for URS on their first (n=13) and fourth (n=13) cases to evaluate transfer validity.

Results: Participants rated that the training significantly improved their skills (mean: 4.2/5) and that they gained transferrable skills (mean: 4.2/5). A One-way ANOVA test revealed significant improvement in both semi-rigid (p=0.0032) and flexible URS (p=0.0003) skills, with consecutive cases throughout the curriculum and the first OR performance (n=13). Statistically significant improvement was also observed in non-technical skills from the training and first OR performance (p<0.0001). Of the used modalities, flexible URS (mean: 4.3/5) and stone fragmentation (mean: 4.3/5) were rated to be the strongest aspects of the UroMentor VR simulator. In contrast, both the dry-lab models scored the highest with regards to instrument handling, laser stone fragmentation and stone extraction. C-arm control was the most highly rated aspect of fresh frozen cadavers (mean: 4.7/5). Furthermore, there was no difference in OR performance between the cadaveric (n=9) and non-cadaveric groups (n=4; p=0.2500).

Conclusion: The SIMULATE URS curriculum revealed face, content, construct and transfer validity. Participants are currently being followed up in the operating room for 25 URS procedures and will compared to an arm with no simulation experience, as part of the on-going SIMULATE randomised controlled trial.

MP-05.02

Flexible Ureterorenoscopy Training Models: A Radomised Controlled Trial

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Introduction and Objective: With increasing numbers of training models being developed and utilised, the aim of this study was to investigate the difference in acquiring technical skills for flexible ureterorenoscopy between the Key Box (K-Box; Coloplast, France), and the Advanced Scope Trainer (AST; Northampton, UK).

Materials and Methods: This randomised controlled trial recruited 30 novices (medical students) with no prior experience in performing ureteroscopy. Participants were randomised into 2 cohorts using a blocked randomisation process. Each cohort received a didactic 30-minute lecture and tutorial followed by a baseline assessment on the Endoscopic Urinary Tract Model (SimPORTAL, USA), then 4 subsequent training sessions on either the K-box or the AST, in which 2 standardised tasks were undertaken, concluding with a final assessment on the Endoscopic Urinary Tract model.

Results: Average time taken to complete the baseline assessment tasks and final assessment tasks for participants using the K-box as a training tool was 641 seconds and 310.4 seconds respectively, thus a reduction of 330.6 seconds (52%). Average time taken to complete the baseline assessment tasks and final assessment tasks using the Advanced Scope Trainer was 694.8 seconds and 338.4 seconds respectively, resulting in a reduction of 356.4 seconds (51%). Task checklist score increase in baseline and final assessment after using Advanced Scope trainer showed an average 54% increase, from an average score of 20.6 to 31.6. Task checklist score increase in baseline and final assessment after using K-box showed an average 57% increase with an average score of 20.3 during baseline assessment to 31.9 in final assessment.

Conclusion: Flexible ureteroscopy is an important procedure in urolithiasis, with the training received by trainees limited by technical difficulty. The bench models evaluated; K-box and Advanced Scope Trainer, were both effective in increasing the acquisition of technical skills, with the K-box slightly outperforming the Advanced Scope Trainer.

MP-05.03

Role of Simulation in Urolithiasis Intervention (URS and PCNL) as Reflected by the Publication Trend Over the Last 2 Decades

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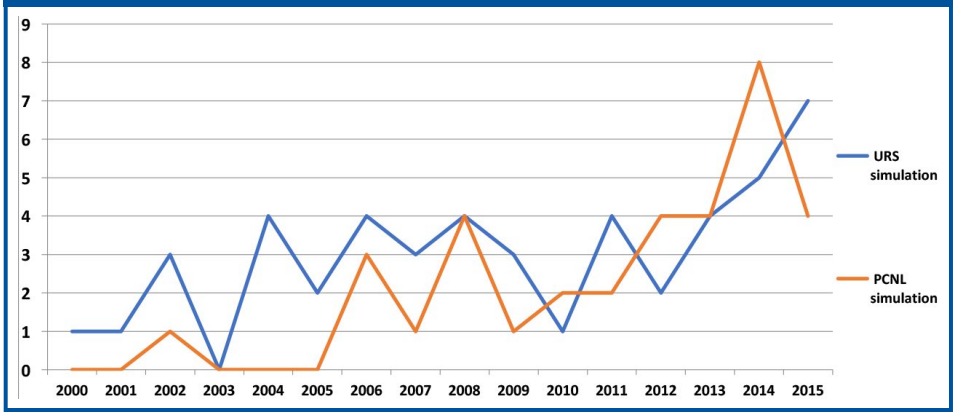
Introduction and Objective: Simulation training for stone surgery is now increasingly used as part of training curricula worldwide. Simulation for Endourologists focuses on ureteroscopy (URS) and percutaneous stone surgery (PCNL) with a continued quest for providing 'realism' to trainees. We wanted to see whether this is reflected in the publication trend and did a comprehensive PubMed database search over the last 16-years.

Materials and Methods: All published papers on 'simulation', 'stone', 'Urolithiasis', 'kidney stones', 'renal stones', 'ureteric stones', 'percutaneous nephrolithotomy', 'percutaneous stone surgery', 'PCNL' and 'PNL', 'ureteroscopy', 'URS' and'training' were searched on PubMed over the last 16-years from 2000-2015. There were no language restrictions and all non-English language papers with published English abstracts were also included in our review. While review articles were included, case reports and those papers that did not have a published abstract were excluded from our analysis. Data was divided into two 8-year periods, period-1 (2000-2007) and period-2 (2008-2015).

Results: During the last 16-years, a total of 82 papers have been published on simulation for stone surgery including 48 papers for URS and 34 papers for PCNL

MP-05.03, Figure 1.



(Figure 1). There seems to have been a steady rise in simulation based papers over the last 16-years. When comparing the two time periods, there were 23 papers published in period-1, which had more than doubled (increase of 159%) to 59 papers in period-2. While URS based simulation papers had increased from 18 to 30 during this period (67% rise, p=0.007), PCNL based simulation papers had increased from 5 to 29 (a rise of 480%, p<0.001). There was only 1 simulation based PCNL paper published in the first 6-years of the study period (2000-2005), with a linear increase since then, potentially showing a renewed interest in this technique with minimally invasive PCNL techniques.

Conclusions: Published papers on simulation has increased over the last 2-decades showing not only a renewed interest but a realization that simulators have a huge role in the modern day Endourology training and a new generation of simulators that provide 'realism' in training.

MP-05.04

Renal School: Pre-Operative Patient Education Prior to Elective Renal Surgery Improves Post-Operative Outcome and Achieves High Patient Satisfaction

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Introduction and Objectives: ERP have been proven to improve patient outcomes and reduce length of hospital stay (LOHS). There is limited evidence regarding the role of pre-operative patient education. BAUS ERP guidelines specifies that a well-informed and motivated patient is integral to successful implementation of ERP. A pioneering pre-operative Renal School has been introduced from May 2016 at Whiston Hospital. We have assessed outcomes of this novel service.

Materials and Methods: Two hundred and sixty one patients undergoing elective renal surgery over a 5year period were grouped into those attending pre-operative renal school (RS n=61) and those who did not (Non-RS n=201). LOHS and patient satisfaction were primary outcomes. Type of surgery and surgical approach were sub-analysed, p values=<0.005 were deemed statistically significant. Patient satisfaction following renal school was assessed using patient diaries, and standardised questionnaire telephone follow up at 24hrs and 7 days post-discharge.

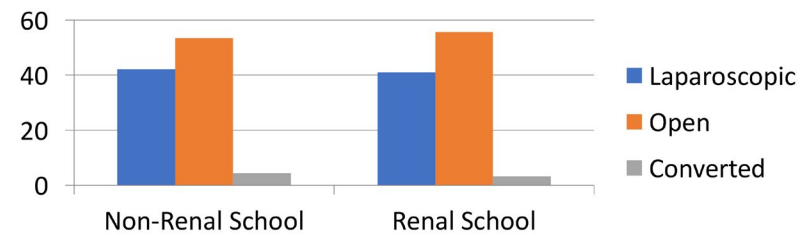
Results: RS-patients had a statistically significant reduction in mean LOHS compared to Non-RS, 4.4 vs. 6.8 days respectively (p=<0.001), producing a potential cost saving of £58,560 over the 8 months since introduction. There was a consistent reduction in LOHS for RS-patients across all surgical approach sub-groups (see table 1, over page). For laparoscopic procedures the reduction in LOHS was 5.9 vs 3.7 days (p=<0.005). Mean patient satisfaction score was: 8.5/10, 81%-rated the service as very informative/helpful, 13%-good/useful, 6%-brilliant. Zero percent-as average or unhelpful.

Conclusion: Our analysis demonstrates that preoperative education in the form of renal school as part of

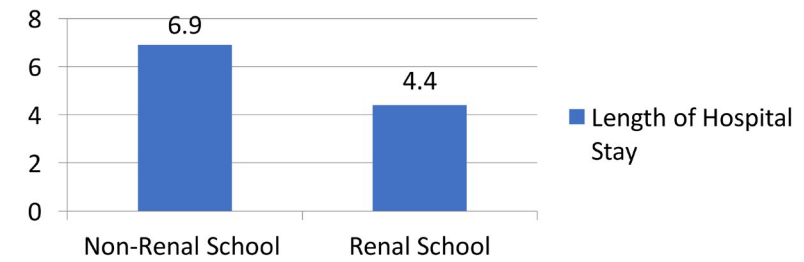
MP-05.04, Table 1. Mean and Median Length of Hospital Stay of Each Group

		Non-Renal School		Renal School		
			Standard deviation		Standard deviation	p-value
TOTAL		201		61		
	LOHS mean	6.8	4.6	4.4	1.9	<0.001
	LOHS Median	6		4		
OPEN						
	Total	106		32		
	LOHS mean	7	3.4	4.8	1.9	<0.001
	LOHS median	6		4		
LAPAROSCOPIC						
	Total	84		25		
	LOHS mean	5.9	4.8	3.7	1.6	<0.001
	LOHS median	4		3		
CONVERTED						
	Total	11		2		
	LOHS mean	11.7	8.6	5.3	1.9	0.016
	LOHS median	7		4.5		

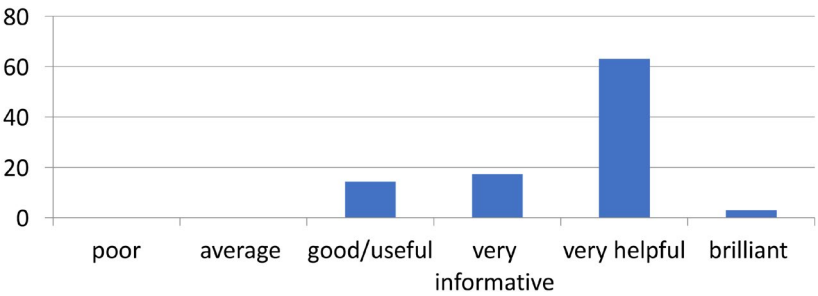
MP-05.04, Figure 1. Percentage of Patients in Each Surgical Approach Sub- Group



MP-05.04, Figure 2. Length of Hospital Stay (Days)



MP-05.04, Figure 3. Patient Feedback



ERP is achievable and produces significant reductions in LOS with associated cost savings. It is associated with excellent patient compliance and satisfaction.

MP-05.05

Electronic Health Records Data Extraction for Practice Audit in Urology: 'Hot Spots' in Ureteroscopy

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Introduction and Objective: Ureteroscopy is commonly used in the management of stone and other diseases of the ureter. The use of stent before and after ureteroscopic lithotripsy remains controversial. Electronic Health Records (EHR), a software platform that contains data captured during patient encounter is useful for billing but other applications in research, data analysis, practice audit and quality improvement are gaining momentum. In 2013, we adopted the use of Electronic Health Record (EHR). The purpose of this study is to understand the basic ways of manipulating EHR data to identify "hot spots" in ureteral stone management and describe the treatment outcomes in a community urology practice.

Materials and Methods: Data recorded in the physician's clinical notes, operative room records including details of procedure and fluoroscopy times and follow up were reviewed and extracted. Tracking of the procedures were verified using the Diagnostic and Billing codes. For question formation and sequencing, a literature search was completed through PUBMED, Medline, Cochrane Data base using such words and phrases as EHR Ureteroscopy Stent or No Stent, EHR Data analysis. Data collection was between 2001 and 2004 and included patient's age, sex, stone features, stent or no stent, operating and fluoroscopy times, out-patient or in-patient. Data extracted were then transferred into a random number spread sheet function for analysis.

Results: There were 192 procedures - 149 'Stent' and 43 'No Stent', ratio 3:1.These two groups were comparable regarding patients , stone characterestics, stone free rates , infections and complications .The mean stone size was 8.5+/-2mm.Stone free rates at 6 weeks was 100% in each group. There was relief of renal colic in all patients immediately. After 2 days, lower urinary tract symptoms (LUTS) were significantly less in patients with 'no stent' compared to those who were stented. Our findings appear to be similar with published data in the literature.

Conclusion: Data extraction and manipulation from the EHR was successful. In addition to billing purposes, EHR application in research, chronic disease management, quality improvement and practice audit is attractive and will grow.

MP-05.06

Revisiting Vesicourethral Anastomosis During Radical Retropubic Prostatectomy

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Introduction and Objective: Vesicourethral anastomosis (VUA) represents a challenging step of Radical Prostatectomy (RP) because of limitation of space in the depth of men's pelvis, lack of control on knots during tightening and subsequent inadequate coupling of VUA or breakdown of knots and extremely difficult reapplication of sutures. To facilitate this step of RP we have developed a simple and reproducible technique and report our 8 years experience.

Materials and Methods: We used two extra long De-Bakey tissue forceps to approximate the bladder neck to the urethral stump. We found it more beneficial than Babcock clamp especially in obese patients with excess fatty tissue in pelvic area. Using this technique surgeon's assistant can sweep the fatty tissue posteriorly away from anastomotic area and make more space for surgeon's hand and push the reconstructed bladder neck down while the sutures are being tied. We perform VUA using six 3-0 vicryl sutures starting by tightening of the anterior one then move on to the 2-, 10-, 4-, 8- and 6-o'clock positions.

Results: We analyzed data from 100 patients with prostatic cancer who underwent RP performed by one surgeon from 2009 to 2016. There were only 2 sutures disrupted while tying. In two cases (2%) we encountered drain output more than 30 mL/day on postoperative day 2 and drainage was left in place longer. The goal of urinary full continence has been achieved in 52%, 79% and 81% of patients immediately after catheter removal, 3 months and 6 months after surgery, respectively. Continence (full continence +continence by timed voiding plus medication) has been achieved in 84%, 98% and 100% of the patients immediately after catheter removal, 3 months and 6 months after surgery, respectively.

Conclusions: We introduce a new simple modification of VUA during RP. The surgical technique has been shown as independent predictors of urinary continence. Using this technique; in addition to decrease in anastomotic disruption rate and increasing knot tying control, may affect postoperative urinary continence after RP.

MP-05.07

Learning from Urological Complications in the UK: The Past, the Present and the Future

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Introduction and Objective: Historically, the medical profession has been notoriously bad at discussing adverse events. A defensive, closed culture existed for many years, culminating in wide scale loss of public trust. In recent years we have made great strides in the way we discuss and learn from complications, but room for improvement remains.

Materials and Methods: We provide a commentary on the past, present and future of dealing with complications in the UK, using available public information.

Results: Numerous NHS scandals have recently emerged, uncovering a culture with little transparency, and where stories of potential whistleblowers turning a blind eye were all too familiar. Thankfully, via lessons from the aviation industry, things are changing. Classification of complications via the Clavien-Dindo system has allowed surgeons to compare themselves more accurately. Public reporting of surgical outcomes via BAUS can only improve results ("the more we are watched, the better we behave"). Complication sessions at urological meetings are commonplace, and video recording of minimally-invasive surgery has allowed us to capture surgical complications like never before. Clearly though, there is a long way to go. Public reporting certainly has its faults. Patient outcomes are related to the wider multidisciplinary team rather than surgical proficiency alone, and debate regarding which outcomes to measure, and issues of case mix, continue to rage on. In an era of social media, we must also learn to keep apace with new ways of sharing information.

Conclusion: Discussion of complications is not easy; the negative effects of complications on surgeons are well documented. We have been historically poor at discussing adverse events as a result. Great improvements have been made by national reporting and routine open discussion. However we must continue to develop in the modern era for the safety of our patients.

MP-05.08

Surgical Blade Guided Simplified Percutaneous Large Bore Suprapubic Cystostomy is Safe in the Hands of Surgical Residents

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Introduction and Objective: Suprapubic cystostomy remains a common surgical procedure done for urinary retention especially where urethral catheterization fails. In low resource economies, this procedure is still widely done through the open approach unlike in more developed economies where the percutaneous approach using commercial kits is common. In the absence of commercial suprapubic cystostomy kits - a simplified suprapubic cystostomy approach using specially selected surgical blades was introduced in our hospital in 2013. The aim of this study is to report on the skill acquisition of this technique by surgical residents in the department of surgery.

Materials and Methods: Fifty seven male patients with urinary retention were treated between January 2015 and December 2016 – all using a new simplified suprapubic cystostomy approach. The simplified suprapubic cystostomy approach consisted of puncture of the palpably distended bladder with a large size surgical blade (size 20, 22 or approximate size) along the mid abdominal line 2 finger breaths above the superior margin of pubic symphysis. Prior to the puncture, application of local anesthesia and successful aspiration of urine at same level was done. Subsequently a size 18 or 20 Foley catheter is then passed into the bladder.

Results: The mean age of the patients was 58.6 (range of 24 to 100 years). The causes of urinary retention were: urethral stricture – 26 patients, benign prostatic hyperplasia (BPH) – 30 patients, cancer of the

MP-05.07, Table 1. The Past, Present and Future of Discussing Complications in Urology

Historical	Modern Era	Future Developments
Closed culture – no reporting system, lacklustre morbidity and mortality meetings	Open Reporting BAUS Database (5) Dr Foster analytics provider (6)	Better stratified open reporting taking into account the unit, the multi-disciplinary team, the case mix More appropriate choice of outcomes measured Use of patient reported outcome measures
No national recording or accountability for operative complications	National & International Database BAUS Surgeon Specific Database (5)	Outcome league tables Changing delivery of care according to results. High volume practice in fewer centres.
No classification of complications, making comparison of care difficult	Clavien-Dindo grading of Complications for comparison (3)	Further urology-specific classification systems
Rare public discussion of when things go wrong	Conference Complication Sessions	Increasing use of social media as a discussion forum
Limited capability to share operative complications in real time	Ability to video minimally invasive procedures. Live surgery demonstrations Individual Surgeons collecting anectodal complication libraries (4)	Dedicated anonymised complication video library National & International Complication Databases Increasing use of social media as a means of sharing information
Closed culture – no reporting system, lacklustre morbidity and mortality meetings	Open Reporting BAUS Database (5) Dr Foster analytics provider (6)	Better stratified open reporting taking into account the unit, the multi-disciplinary team, the case mix More appropriate choice of outcomes measured Use of patient reported outcome measures
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No classification of complications, making comparison of care difficult	Clavien-Dindo grading of Complications for comparison (3)	Further urology-specific classification systems
Rare public discussion of when things go wrong	Conference Complication Sessions	Increasing use of social media as a discussion forum
Limited capability to share operative complications in real time	Ability to video minimally invasive procedures. Live surgery demonstrations Individual Surgeons collecting anectodal complication libraries (4)	Dedicated anonymised complication video library National & International Complication Databases Increasing use of social media as a means of sharing information

prostate – 1 patient. 34 (59.6%) of the cases were done solely by the residents while 23 (40.3%) were done by the residents under supervision by consultants. There was no mortality and no adjacent viscera puncture.

Conclusions: The skill of surgical blade guided simplified suprapubic cystostomy has been safely acquired by the surgical residents in our hospital and this has drastically reduced cases of open suprapubic cystostomy.

MP-05.09

Video Surgery Learning: How (Should) We Prepare the Surgeries?

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Introduction and Objective: Since the end of the XIX century, teaching of surgery has remained practically unaltered until now. With the dawn of video-assisted laparoscopy, surgery has faced new technical and learning challenges. Due to technological advances, from Internet access to portable electronic devices, the use of online resources is part of the educational armamentarium. In this respect, videos have already proven to be effective and useful; however the best way to benefit from these tools is still not clearly defined. The purpose of this work was to assess the importance of video-based learning, using an electronic questionnaire applied to residents and specialists of different surgical fields.

Materials and Methods: Importance of video-based learning was assessed in a sample of 141 subjects, using a questionnaire distributed by a GoogleDoc® online form.

Results: We found that 98.6% of the respondents have already used videos to prepare for surgery. When comparing video sources by formation status, residents were found to use Youtube significantly more often than specialists (p<.001).

Conclusion: Video-based learning is currently a hallmark of surgical preparation among residents and specialists working in Portugal. Based on these findings we created the first Portuguese urological surgery e-book.

MP-05.10

Frequency of Unplanned Readmission Following Daycare Urological Surgery

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Introduction and Objective: The practice of day care surgery has gained widespread acceptance in many surgical specialties and its popularity is increasing. One of the problems with day care surgery is unplanned readmission. It has a negative impact on healthcare system and patients. The objective is to determine the frequency of unplanned readmissions and to identify subgroups of patients with highest unplanned readmission rate after daycare urological surgery in a tertiary care hospital.

Materials and Methods: We conducted a prospective case control study to identify patients who required unplanned readmission within 30 days of daycare procedure. All daycare surgeries performed between 1st Jan to 15th March 2016 at Section of Urology were included. Data analysis was done through SPSS version 20. Patients who were readmitted were compared with those who did not require readmission. Chi-square/ Fischer exact test was applied for comparison of categorical variables where appropriate. Independent sample t-test was used for comparison of continuous variables. Logistic regression analysis was done to identify factors predicting readmission. A p- value of ≤0.05 was taken as statistically significant.

Results: Out of 256 patients who fulfilled inclusion criteria, 247 were available for data analysis. Nine patients were readmitted within 30 days of daycare procedure. Age, gender, BMI, Financial class and comorbidities were not significantly different between the two groups. Multivariate logistic regression analysis showed that ASA class III patients and patients with ECOG performance status II and III are more likely

to require readmission with relative risk of 7.79 (CI = 2.09-29.01) and 12.37(CI = 3.32 to 46.08) respectively.

Conclusion: Day care urological surgery is effective with low readmission rate. Patients with ECOG performance status of II, III or ASA Class III are more likely to be readmitted.

MP-05.11

Quality of Handwritten Surgical Operative Notes from Junior Doctors and Surgical Trainees in a Tertiary Teaching Hospital

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Introduction and Objective: Surgical operation notes are an important form of medical record keeping. This document is essential for the immediate and long term care of the patient. However, apart from the medical implications, the quality of surgical operation notes also has economic and medico-legal ramifications1. Well kept records can also be used for audit and research thus helping further improve the delivery of care to patients2. We thus embarked on an audit to assess the quality of surgical operation notes written by junior doctors and trainees against a set standard (the Royal College of Surgeons of England guidelines)3,4

Materials and Methods: We undertook a retrospective audit of 164 Urology and General Surgery operation notes handwritten by junior doctors and surgical trainees in a tertiary teaching hospital in Melbourne over a similar month period in 2014 and 2015 was assessed for quality based on parameters described by the Royal College of Surgeons of England (RCSE) guidelines3,4 .

Results: A significant proportion of surgical operative notes were incomplete, with information pertaining to the time of surgery and DVT prophylaxis in particular being recorded less than 51% of the time (22.42% and 36.36% respectively).

Conclusions: Trainees need to be aware of the expected standards to help improve compliance to reach 100% in all standards. Given the recurring theme of incomplete surgical operation notes as documented in the literature5,6, this illustrates the need for ongoing teaching in this regard, supervision from consultants and the potential need for a shift to electronic operation notes to improve the legibility, completeness of notes aiding future audits and research, more legible documentation that can be used for medic-legal reasons (e.g. as defense in court cases) and also to improve funding for hospitals by automatic coding for example7,8.

MP-05.12

Measuring Competence Progression during Simulation Training in Urology

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Introduction and Objectives: The Urology Simulation Boot Camp (USBC) is a novel five-day course intended to provide urology trainees in the United Kingdom, with 30hrs of 1:1 training from consultants (experts) on a variety of high and low fidelity simulators. We evaluated the effect of an intensive simulation training course on trainees' competence levels and demonstrate a model of evaluating competence progression.

Materials and Methods: In this single-group cohort study, 33 trainees rotated through modules based on aspects of the U.K residency urology curriculum (I.S.C.P 2012). Trainees undertook a pre- and post-course MCQ to test knowledge. Competency was evaluated by an expert using a global-assessment score. Competence of a procedure was scored as: "A" - Good (≥4 on a 5-point Likert Scale) and "B" – Poor (Likert scale of 1-3). Competence progression

MP-05.11, Table 1. Showing Completeness of Urology and General Surgery Operation Notes Handwritten by Junior Doctors and Trainees

Parameter	Urology	General Surgery	Non SET	SET 1- 3	SET 4 – 6	Overall
Date	84 (98.8%)	80 (100%)	44 (100%)	45 (100%)	75 (100%)	164 (99.39%)
Time	2 (2.35%)	35 (43.75%)	21 (47.72%)	3 (6.67%)	13 (17.33%)	37 (22.42%)
Elective/Emergency procedure	28 (32.9%)	74 (92.5%)	43 (97.72%)	18 (40%)	41 (54.67%)	102 (61.81%)
Names of surgeon and assistant	84 (100%)	80 (100%)	44 (100%)	45(100%)	75 (100%)	165 (100%)
Name of anaesthetist	12 (14.1%)	59 (73.75%)	33 (75%)	15 (33.33%)	23 (30.67%)	71 (43.03%)
Operative Diagnosis	84 (100%)	78 (97.5%)	44 (100%)	45 (100%)	73 (97.33%)	162 (98.78%)
Operative procedure	84 (100%)	79 (98.75%)	44 (100%)	45 (100%)	75 (100%)	163 (99.39%)
Incision	29/33 (87.87%)	74 (92.5%)	41/43 (95.3%)	17/21 (80.95%)	45/49 (91.84%)	103/113 (91.11%)
Position	29 (34.11%)	55 (68.75%)	31 (70.45%)	19 (42.2%)	34 (45.3%)	84 (50.9%)
Type of anaesthetic	72 (84.7%)	65 (81.25%)	36 (81.81%)	37 (82.2%)	64 (85.3%)	137 (83.03%)
Antibiotics	77 (90.58%)	78 (97.5%)	42 (95.45%)	44 (97.77%)	69 (92%)	155 (93.93%)
DVT prophylaxis	0 (0%)	60 (75%)	31 (70.45%)	9 (20%)	20 (26.67%)	60 (36.36%)
Findings	82 (97.64%)	79 (98.75%)	44 (100%)	43 (95.55%)	74 (98.67%)	161 (98.17%)
Complications	83 (98.82%)	80 (100%)	44 (100%)	45 (100%)	74 (98.67%)	163 (99.39%)
Tissue removed/added/altered	66/69 (95.65%)	80 (100%)	43/43 (100%)	39/41 (95.12%)	64/65 (98.46%)	146/149 (97.98%)
Haemostasis	48/65 (73.84%)	39 (48.75%)	19/43 (44.18%)	33/41 (80.49%)	35/61 (57.38%)	87/145 (60%)
Details of closure	29/35 (82.85%)	80 (100%)	43/43 (100%)	21/22 (95.45%)	45/50 (90%)	109/115 (94.78%)
Signature	84 (100%)	79 (98.75%)	44 (100%)	45 (100%)	74 (98.67%)	163 (99.39%)
Post-operative instructions	83 (98.82%)	75 (93.75%)	44 (100%)	45 (100%)	70 (93.33%)	158 (96.34%)
Author	78 (91.76%)	79 (98.75%)	43 (97.73%)	45 (100%)	70 (93.33%)	157 (95.15%)
Use of "RPAO"	66 (77.64%)	56 (70%)	37 (84.09%)	42 (93.33%)	43 (57.33%)	122 (73.93%)

was calculated as the change in score between baseline and final assessments. At the end of the course trainees received a "Summary sheet" comprising their scores and qualitative feedback based on expert observation.

Results: Mean MCQ scores improved by 16.7% (p<0.001) between pre and post-course exam. At summative assessment, 87.9% of trainees scored "A" in instruments knowledge & assembly compared to 44.4% at baseline (p<0.001). Approximately, 62% of Transurethral resection of prostate & Ureteroscopy were passed with "A" on the summative day as opposed to 16.7% at baseline (p<0.001). There as a mean improvement of 439s (p<0.001) by trainees in the completion of the European-Basic Laparoscopic skills exam. In total, 92.3% and 73.5% of experts and trainees respectively believed the "Summary sheet" was a useful tool to highlight their performance

Conclusions: The USBC was successful in delivering competence progression for trainees. The use of our grading system for the measurement of competence progression is simple to understand, and may be adapted for other surgical skills courses. This is invaluable in identifying future training needs for the trainee

MP-05.13

The Steps and Results of Starting from Zero a Centre of Reconstructive Urology Focused in Urethral Surgery

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Introduction and Objective: We describe the strategies and results of starting a centre for reconstructive urology focused in urethral surgery.

Materials and Methods: In early 2015 was established by our Department the mission of creating a centre for reconstructive urology focused in urethral surgery. As no one of the staff had any experience in the area, we design a strategy in four steps to develop our centre. First, was created an ambulatory to support patients. Second, we invited two skilled surgeons in reconstructive urology to perform three levels of surgeries: level 1 (terminal-terminal urethroplasty and perineal urethrostomy); level 2 (anterior urethroplasty with graft or flap); level 3 (posterior urethroplasty; stricture greater than 10 cm; complex fistulas). Third step, our surgeon was sent to a referral centre abroad as an observer. Fourth step was the establishment of electronic mentoring (by email or cell phone messengers programs) was difficult cases could be discussed. All data were collected prospectively and a single surgeon performed all surgeries.

Results: From February 2015 until December 2016, two hundred and one patients were attended at ambulatory level and performed 57 procedures. Fifty-five were men (96.5%) and two women (3.5%). Mean age was 49 years (range 16 to 84). The creation of specific ambulatory increased the number of attended patients from 4 in 2013 to 67 in 2015 and 134 in 2016. After two skilled surgeons have performed seven procedures, we did 15 surgeries in 2015 and 42 in 2016. Of all surgeries, twenty-four (42.1%) were level 1; twenty-seven (47.4%) level 2; four (7.0%) level 3, and two uretroplasties were converted to urinary diversion (3.5%). After the surgeon had visited a high volume centre the number of level 2 or 3 surgeries increased from 14 in 2015 to 23 in 2016. The electronic mentoring was a subjective variable and it was demanded in 9 of 15 (60%) procedures in 2015. In 2016 we asked for orientation 14 of 42 (33%) surgeries, but only for level 2 or 3.

Conclusion: We applied four steps to start developing our centre and each step proved to be helpful for the process.

MP-05.14

Prospective Randomized Comparison of Standard Oral Informed Consent and An Interactive Audio-Visual Informed Consent in Terms of Comprehension and Anxiety in Patients Undergoing Ureterorenoscopy

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Introduction and Objective: For the informed consent mainly oral and written delivered information are used. We investigated in the differences in understanding and anxiety between oral informed consent and interactive audio-visual informed consent (IPAD APP-ANIMEDES) in patients with an intended ureterorenoscopy for stone disease.

Materials and Methods: Before elective ureterorenoscopy 31 patients were randomly assigned in two different groups for informed consent. A positive ethic vote was present. Group A (16 patients) was informed written and oral with the standard Perimed informed consent sheet. Group B (14 patients) received information for informed consent by a 3D-audio-visual animation by AniMedical without further explanations by the surgeon. Before the informed consent was conducted a questionnaire to the patient's education and computer literacy was completed. To assess the understanding of the procedure a pretested questionnaire with 10 questions was handed out. Anxiety was evaluated using the standardized questionnaire KASA.

Results: Although the patient's education at baseline did not differ, Group B with the 3D-audio-visual informed consent had significant better understanding. 76% of the questions were answered correct compared to 59% in the Perimed group. Anxiety levels did not significantly differ between the two groups.

Conclusion: The interactive audio visual informed consent is of easy handling independent of the patient's computer literacy. Urologists and patients can benefit from the 3D-audio-visual informed consent process as the understanding of the presented information significantly improved. Furthermore the education is homogeneous. Nevertheless it remains essential that the surgeon contacts the patient individually. 3D-audio-visual informed consent seems not adequately to detract patient anxiety therefore personal contact cannot be omitted

MP-05.15

Blue Print for a Competency-Based Surgical Curriculum in Urology: Agreement and Discrepancies in the Indian National Opinion

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Introduction and Objective: To identify core urology operative procedures across India that should be part of urology curriculum through a web-based survey.

Materials and Methods: A web-based survey using Survey Monkey was conducted between October 2016 and February 2017. The questionnaire broadly comprised set of 5 questions. Respondents were requested to grade psycho-motor competencies into three groups: Group-A competencies were those that were essential for the trainee to learn (Must know); Group-B competencies were those that were good to acquire (Good to know); Group-C procedures were labelled as desirable to know. The 5th question included list of 37-common urological procedures based on current urology practice that were to be graded.

Results: Out of 3018 forwarded survey questionnaire to members of Urological Society of India, 485 (15.75%) responses were received. The highest number of respondents was from the private-sector (67%). Among respondents 18% representation came from north-India, 12% from east-India, 30% from west-India, 37% from south-India and 3% from the central zone. Out of 37 procedures, 20 procedures were classified into group-A identifying them as core clinical competencies; 15 were voted into Group-B and only 2 procedures were considered in Group-C. These results are shown in Table.

Conclusions: This survey will help to formulate a framework for designing a better curriculum. Our survey positively proves the presence of consensus in current practicing urologists of India towards the 20/35 procedures to be as a part of the core urology competency. Further additions to the classification system can be made with similar surveys which will make this system more robust and reliable.

MP-05.16

Outcomes of Live Surgery Broadcast over a 6 Year Experience

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Introduction and Objective: Live surgery broadcast (LSB) is a popular tool for teaching essential surgical steps to a broad audience during conferences. The concerns are ethical considerations and impact for education of the audience. The impact of the LSB on the safety of patients has been weakly reported. Here we present our LSB experience over 6 years.

Materials and Methods: We included 129 consecutive patients who underwent surgery during LSB between June 2011 and May 2016. We categorized the procedures into six different issues: flexible/rigid uret-

MP-05.15, Table 1.

S.No	Procedure	Minimum	Maximum	Median	Mean	SD
1.	Open Simple Nephrectomy	1	3	1	1.04	0.22
2.	Open Radical Nephrectomy	1	3	1	1.32	0.54
3.	Laparoscopic Simple Nephrectomy	1	3	2	1.77	0.65
4.	Laparoscopic Radical Nephrectomy	1	3	2	2.17	0.68
5.	Open Nephroureterectomy	1	3	1	1.32	0.52
6.	Laparoscopic Nephroureterectomy	1	3	2	2.22	0.63
7.	Radical Nephrectomy with vena cava thrombectomy	1	3	3	2.41	0.68
8.	Partial Nephrectomy	1	3	2	1.84	0.73
9.	PCN	1	3	1	1.03	0.21
10.	PCNL	1	3	1	1.07	0.28
11.	URS	1	3	1	1.02	0.16
12.	Open Pyeloplasty	1	3	1	1.05	0.25
13.	Transurethral Ureterocoele Incision	1	3	1	1.27	0.52
14.	TURBT	1	3	1	1.04	0.22
15.	Cystoscopic Litholapaxy	1	3	1	1.03	0.19
16.	Radical Cystectomy with Diversion	1	3	2	2.02	0.71
17.	Bladder Augmentation	1	3	2	2.13	0.7
18.	Bladder Neck Reconstruction	1	3	3	2.54	0.63
19.	VVF Repair	1	3	1	1.56	0.64
20.	TURP	1	3	1	1.02	0.17
21.	HoLEP (Enucleation)	1	3	2	2.28	0.66
22.	Radical Prostatectomy	1	3	2	2.27	0.65
23.	TRUS Biopsy	1	3	1	1.18	0.44
24.	Partial / Total Penectomy	1	3	1	1.17	0.42
25.	Hypospadias Repair	1	3	2	1.76	0.66
26.	Cavernosal Shunts	1	3	2	2.07	0.77
27.	Direct Vision Internal Urethrotomy	1	3	1	1.02	0.16
28.	Flap Urethroplasty	1	3	2	1.79	0.65
29.	Graft Urethroplasty	1	3	1	1.49	0.6
30.	Excision and Primary anastomotic urethroplasty	1	3	1	1.3	0.53
31.	Varicelectomy	1	3	1	1.12	0.35
32.	Vasectomy	1	3	1	1.11	0.37
33.	Vasovasotomy	1	3	2	2.21	0.75
34.	Orchidiopexy	1	3	1	1.08	0.3
35.	Radical orchiectomy with / without RPLND	1	3	2	1.65	0.7
36.	Stress Urinary Incontinence - Sling Procedures	1	3	2	1.74	0.67
37.	Adrenalectomy	1	3	2	1.95	0.65

erorenoscopy for urinary stones (URS), percutaneous approaches (PCNL), transurethral prostate and bladder interventions, reconstructive procedures and conservative treatment of upper urinary tract tumours (UUTT). Primary outcomes were intra and postoperative complications within a 3 months follow-up period categorized according to the ClavienDindo classification. Secondary outcomes were operative time, time between anaesthesia and beginning of the procedure, length of stay and retreatment rate (RR).

Results: Median age was 63.1 years (23.3-93). Total intraoperative and postoperative complications rates were 4.6% (6/129) and 11.6% (15/129), respectively. The distribution of intraoperative complications was 2.3% (3/129), 1.5% (2/129) and 0.75% (1/129) in the PCNL, transurethral bladder procedure, and transurethral prostate procedure groups, respectively. The distribution of postoperative complications was 6.9% (9/129) in the PCNL group, 2.3% (3/129) in the transurethral prostate procedure group, and 0.75% (1/129) for each of the following groups: URS, transurethral bladder procedure and UUTT treatment groups. There were 1 Clavien I, 7 Clavien II and 7 Clavien IIIb postoperative complications (Table). Secondary outcomes are summarized in the table.

Conclusion: LSB appears to be as safe as routine surgical procedures in terms of intra and postoperative complications rates

MP-05.17

Smile, You're on Camera: Assessing the Prevalence of Taking Photos at Medical Conferences

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Introduction and Objective: The majority of health professionals own camera-phones; photos can be taken for educational purposes, for example taking a picture of a slide during a presentation. It is easy to capture important visual information for later convenience. Camera-phones are increasingly moderated at entertainment venues. Intellectual property and copyright are no different at scientific meetings; there is also a trend to share resources e.g. via twitter. Photography in medicine raises concerns regarding patient and confidential data; but little to no literature is available on photos during educational or scientific presentations. We assessed the extent of taking photographs during presentations at an International Urology Conference.

Materials and Methods: Assessment occurred during Plenary and Moderated Poster sessions, over 24hours. A camera-phone held in the direction of the presentation counted as one photograph. Conference photographs on twitter were assessed using the conference hash-tag.

Results: Eighteen Plenary Session presentations (19%) were evaluated: approximately 265 slides and 10-40 minutes duration; and 20 Moderated Posters (23%, 3-4minutes duration). The speakers were of variable notability and audience size ranged from 13-200. In total 1,078 photographs were counted, 48 during the poster session. During the plenary sessions, 115 (11%) photographs were taken of anatomy related slides, 135 (13%) related to research and 69 (7%) were operative images. On 8 occasions delegates may have been videoing. Two thousand two hundred and seventy five tweets were sent using the promoted conference hash-tag; 8% (n=189) contained photographs of presentation slides.

Conclusion: Photography during presentations was common and appeared to be acceptable; as no official guidance was given. However permission is usually absent and an infringement of copyright is being committed. Defining use and distribution of photographs would be beneficial to ensure photos are taken in the spirit of education and not theft. Further research could be done into educational benefits of photographing presentations and potentially seek alternatives.

MP-05.16, Table 1.

Total n= 129	UUTT	Bladder	Reconstructive Surgery	Prostate (Resection / Enucleation / Vaporisation)	PCNL	URS for stones
n (%)	8 (6,2)	18 (13,9)	9 (6,9)	32 (24,8)	23 (17,8)	39 (30,2)
Operative Time (OT), min [range]	68 [40-87]	59 [40-102]	47 [15-80]	70 [38-165]	122 [30–240]	70 [22- 55]
Delay between anaesthesia and operation, min [range]	15 [6-22]	17 [5-36]	31 [10-87]	21 [7-61]	25 [5-74]	20 [2-66]
Intraoperative complications n (%)	0	2 (11,1)	0	1 (3)	3 (13)	0
Median length of hospital (LOS) stay, d [range]	2 [1-4]	2 [1-4]	2 [1-2]	3 [2-8]	5 [2-31]	2 [2-4]
Postoperative complications during hospitalisation n (%)	1 (12,5)	1 (5,5)	0	3 (9,3)	9 (39,1)	1 (0,7)
Clavien Dindo Grade n (%)	7 (87,5)	17 (94,4)	9 (100)	29 (90,6)	14 (60,8)	38 (97,4)
None	0	0	0	0	1 (4,3)	0
I	0	0	0	3 (9,3)	3 (13)	1 (2,6)
II	0	0	0	0	0	0
IIIa	1 (12,5)	1 (5,5)	0	0	5 (21,7)	0
IIIb	0	0	0	0	0	0
IVa	0	0	0	0	0	0
IVb	0	0	0	0	0	0
V	0	0	0	0	0	0
Retreatment n (%)	0	1 (5,5)	2 (22,2)	0	11 (47,8)	8 (20,5)

MP-05.18

Intraoperative Disruptive Behavior: The Medical Student's Perspective

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Introduction and Objective: Disruptive behavior by health care workers may impact team based patient care. Prior research suggests that disruption can reduce psychological safety, hinder teamwork and communication, and increase turnover, but much of this research focused on the perspectives of nurses. We sought to explore the experiences of medical students regarding intraoperative disruptions as well as their view of an ideal intraoperative working environment.

Materials and Methods: Medical students interviewing for urology residency placement were asked to recall an incidence of disruptive behavior during surgery and describe the situation, including inciting factors and performance impact. They also were asked how they imagine their own future operating room. Using grounded theory methodology, field notes from 42 interviews were coded to identify themes and key insights.

Results: Interviewees were 57% male with an average age of 26 years (range 23-34). The vast majority of students (98%) had witnessed intraoperative disruptive behavior (usually by surgeons) such as yelling, throwing instruments, as well as belittling and blaming others. Frustration with missing instruments/equipment or the incompetence of assistants were the most common instigators of disruptive behavior mentioned by students. Students noted undesirable effects of disruptive behavior, including decreased communication/teamwork, lack of learning, contagious negativity, poor morale, and decreased quality of their psychomotor performance. Students recalled feeling afraid, on edge, and stressed by these situations. Some rationalized the surgeons' behavior based on concern for the patient, personality factors, lack of flexibility, fatigue, production pressure, or the stress of the clinical situation. Students prefer a calm surgeon who know the names of their team members and foster an efficient, collaborative environment where questioning and learning is encouraged.

Conclusions: Students provide a valuable perspective on the causes and consequences of disruptive behavior during surgery and suggest potential pathways to improvement. Future quantitative work should explore whether frustration is a significant predictor of disruptive behavior. If so, identification of the intraoperative events that precipitate frustration (e.g., missing instruments) as well as any factors that might moderate that relationship (e.g., fatigue) could provide future intervention targets aimed at preventing frustration and its negative impact on surgical teams.

Moderated ePosters Session 6 Minimally Invasive Surgery

Friday, October 20
1605–1735

MP-06.01

Prospective Comparative Study of the Efficacy and Safety of New-Generation Versus Early-Generation System for Super-Mini-Percutaneous Nephrolithotomy (SMP): A Revolutionary Approach to Improving the Irrigation and Stone Removal

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Introduction and Objective: The study sought to compare the procedural and clinical results of SMP with the use of the first- and new- generation devices.

Materials and Methods: A prospective, comparative cohort study was performed from February 2013 to January 2017. A total of 156 consecutive patients undergoing SMP were enrolled in the study. Of 156 patients, the first 85 consecutive patients underwent SMP with the first-generation system, and the other 71 consecutive patients were treated with the new-generation SMP system.The first-generation SMP system consists of a 7 F miniaturized nephroscope and a modified 10 – 14 F plastic sheath with a suction-evacuation function. The new-generation SMP system consists of an 8 F miniaturized nephroscope and a newly designed irrigation-suction sheath. The primary outcome of the present study was the operating time, which was calculated from the starting of percutaneous puncture to the wound closure. Secondary outcomes were the stone-free rate (SFR), blood loss (haemoglobin decrease), hospital stay, and postoperative complications.

Results: The two groups had comparable demographic data such as age, BMI, stone size, stone location, comorbidities, grade of hydronephrosis, and positive preoperative urine culture. The new-generation SMP had a shorter operation time (39.3 vs 50.5 min, p=0.016), and shorter postoperative hospitalization time (2.1 vs 3.0 days, p<0.001) than the first-generation SMP. No significant difference existed between the two groups for SFR, haemoglobin decrease, and tubeless rate. The overall operative complication rates using the Clavien-Dindo grading system were similar between the groups.

Conclusion: The clinical outcomes of SMP with the new-generation system were favorable. The new-generation SMP system was associated with shorter operation time and postoperative hospitalization time than the first-generation system.

MP-06.02

External Validation of Triple D Score and Its Modification to Triple D-Sscore for Better Prediction of Stone Free Rates after Extracorporeal Shock Wave Lithotripsy

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Introduction and Objective: We wanted to externally validate three D score in our center using third generation Electromagnetic lithotripter. Secondly we wanted to apply it on relatively larger stone volume.

Materials and Methods: It was a retrospective study that included 150 adult patients having mean age of 38.1±15years.Out of them 120 (80%) were males and 30 (20%) females.Exclusion criteria included age less than 18 years, coagulation disorders, skeletal deformity, positive urine cultures and abnormal renal anatomy.All of thepatients had CT scan films which were assessed for Stone volume (SV), skin-to-stone distance (SSD), and stone density.Stone free rates and complications were assessed for each category of the score to see their correlation.

Results: The mean stone volume was 337±170mm3 ,mean skin to stone distance of 9.74±2.7 cm and mean stone density of 890±540 .According to three D scoring stone free rates were 38%,56%,53% and 93% for 0,1,2 and 3 score respectively (p 0.001). There is one limitation according to the three D score that they did not take into account the role of lower pole that results in relatively lower stone free rates according to studies. So we did a modification and added S(site) to three D score in which we gave extra point for non-lower pole site while zero point for the lower pole location in three D-S score. Stone free rates were 36%, 47%, 54%, 72% and 99% for 0,1,2,3 and 4 score respectively (0.004). Both three D and three D-S scores were not able to predict significant differences regarding complications of SWL.

Conclusion: Three D score may be a better tool for predicting stone free rates after SWL but lower pole stone especially if it is relatively larger in volume may alter the results of three D score ,so modified three D-S score more accurate for predicting success in both lower and non-lower pole stones respectively. Further studies may be needed to confirm findings of this study.

MP-06.03

Balloon versus One-Shot Amplatz Technique for Tract Dilatation in Ultrasonographically Guided Percutaneous Nephrolithotomy: A Randomized Clinical Trial

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Introduction and Objective: To compare balloon with one-shot Amplatz technique for tract dilatation in totally- ultrasonographically guided PCNL (UPCN).

Materials and Methods: We randomized 66 patients candidate for sonographically guided PCNL in two study groups based on their tract dilatation technique. In the first group, one-shot Amplatz dilatation (AG) was performed whereas in the other group, balloon dilator was used (BG). Procedure time and success rate of dilatation as well as postoperative clinical outcomes were compared between two groups.

Results: Overall operation was lengthier in the AG (80±21 vs. 65±20minutes P=0.02). In 84% (AG) and 87% (BG) of cases, the first attempt for dilatation was successful (p=0.19). The dilatation was appropriate in 36%, short in 57% and too far in 6% of patients in the AG compared with 54%,36% and 9% respectively in the BG (p=0.2). Stone free rate was 87.9% in the AG compared with 72.7% in the BG.(p=0.12) There was no significant difference regarding Hemoglobin drop, transfusion rate, renal function alteration, duration of hospitalization and complications based on Calvien Classification.

Conclusions: Short tract dilatation occurred in both groups and remains as a pitfall of the UPCN. Amplatz group showed higher rate of short dilation although the difference was not significant. Lower pole access is associated with higher risk of short dilation in both groups.

MP-06.04

Insertion of Drainage Tube in the First Access Tract of Multi-Tract Percutaneous Nephrolithotomy for Staghorn Stones: Does It Influence Stone Clearance?

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Introduction and Objective: There is no guide on the management protocol for how to leave the first access tract in percutaneous nephrolithotomy (PCNL) of staghorn stones. We evaluated the stone free rate of multiple tract PCNL for large staghorn stones and its complications when a large bore drainage tube was inserted in the first access tract while continuing lithotripsy through next access tracts and compared the results with when no tube was inserted through the first access tract.

Materials and Methods: Patients with staghorn stones who underwent multi-tract PCNL from January to September 2014 were included. In group A, after completion of lithotripsy through the first access tract, a 24F chest tube was inserted and PCNL was continued through next access tracts. During the same period 15 patients who underwent multi-tract PCNL of staghorn stones by our usual method without inserting chest tube into the first access tract (group B) were used as the control group. KUB and renal ultrasonography were requested 2 weeks after the operation. Stone clearance percent was calculated by dividing the surface of residual stones to the surface of original stones. Complications were extracted from patients' records.

Results: The mean±SD of patients age in groups A and B were 48.2±10.9 versus 48.3±14.5 years (p=0.98). The number of males and females in groups A and B were 14/6 versus 11/4. The difference in preoperative stone surface area in groups A and B was not statistically significant. The mean±SD of stone clearance percent two weeks after the operation was 88.3±4.6 in group

A versus 82.3±8.3 in group B (P=0.02). Hospitalization duration was 3.6±0.8 in group A versus 3.8±1.8 in group B (p=69). Fever was observed in 6 patients in group A versus 3 patients in group B (p=0.7)

Conclusions: During multi-tract PCNL of staghorn stones, placing a drainage tube in the first access tract can increase stone clearance by washing away stone fragments through the drainage tube.

MP-06.05

Laparoscopic Donor Nephrectomy in Patients with and without History of Abdominal Surgery

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Introduction and Objective: Today, laparoscopic donor nephrectomy has replaced open nephrectomy at many transplant centers because of more advantages. The aim of this study is to show that if previous abdominal surgery could increase the complication of subsequent surgery for the patients undergoing laparoscopic donor nephrectomy or not.

Materials and Methods: in this retrospective study, we evaluated the pre-operative, intra-operative and post-operative data of 268 patients underwent laparoscopic donor nephrectomy. The number of 88 patients had history of abdominal surgery (group 1) and 180 other patients with similar characteristics didn't have prior abdominal surgery (group 2).

Results: The mean age, sex and other pre-operative data were similar in two groups. Decrease of hemoglobin in patients group 1 was 0.92g/dL and 1.07g/dL in group 2 (p=0.38). The operation duration was 195 minutes in group 1 and 186 minutes in group 2 (p=0.14). Pack cell transfusion needed in one patient of group 1 and two patients of group 2. Surgery of one patient in group 2 was converted to open because of difficult access to kidney. The mean days of post operation admission was 3.9 in group 1 and 2.6 in group 2 (p=0.001). Re-admission was needed in 3 patients of group 1 and 8 patients of group 2 because of complications (p=0.68). There were no significant differences between two groups in other complications like pneumothorax, fever, wound infection, collection, hematoma, ileus and leak of drain site.

Conclusion: Laparoscopic donor nephrectomy is feasible in patients with history of abdominal surgery. Our study showed no increase of complications and prior surgery wouldn't be a factor to prevent us from this kind of surgery.

MP-06.06

Ureteroscopic Holmium Laser Endopyelotomy for Secondary Ureteropelvic Junction Obstruction

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Introduction and Objectives: Pyeloplasty is the gold standard treatment for ureteropelvic junction obstruction (UPJO). Secondary UPJO is ideally treated with less invasive method rather than re-do open surgery. Here in this study we report our experience in treatment of cases with failed pyeloplasty with Holmium laser endopyelotomy.

Materials and Methods: Patients were referred for loin pain recurrence after open pyeloplasty. Subsequent to ureteropelvic junction stenosis confirmation with CTU and dynamic isotope renal scan, the patients underwent ureteroscopic laser endopyelotomy. Ureteric stents (7F) were placed for 6 weeks postoperatively when ureteroscopy was repeated and stents removed. All patients had CTU and isotope renal scan at 3 months postoperatively.

Results: Seventeen patients presented at a median of 2.8 years (range, 10 months to 5 years) after pyeloplasty (ten open dismembered & seven non-dismembered). Thirteen patients showed symptomatic and radiologic improvement after a mean follow up of 24 months. Four patients required a second laser endopyelotomy after a median of 10 months (5 months to 2 years). All patients were done as day surgery. Symptomatic improvement was documented in all of the patients, and improved drainage was recorded in the 3-month nuclear scans.

Conclusion: Laser endopyelotomy is an effective minimally invasive procedure for secondary pelviureteric junction obstruction.

MP-06.07

Super-Mini Percutaneous Nephrolithotomy (SMP) versus Retrograde Intrarenal Surgery for the Treatment of 1 to 2 cm Lower Pole Renal Calculi: A Multinational Multicenter Randomized Controlled Trial

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Introduction and Objective: The treatment of Lower pole (LP) calculi is controversial, especially 1-2 cm stones, with competing interventions possessing advantages and disadvantages.A multinational multicenter prospective randomized comparison of super-mini percutaneous nephrolithotomy (SMP) and retrograde intrarenal surgery (RIRS) for the treatment of 1 to 2 cm LP renal calculi was done to evaluate the safety and efficacy of these procedures.

Materials and Methods: One hundred and fifty three patients with 1 to 2 cm LP renal calculi who underwent treatment between August 2015 and January 2017 were included in this study at 9 Asian centers and one European center. These patients were randomized to SMP and RIRS groups. One-step stone-free rate (SFR) and SFR at 1-month postoperatively were the primary outcomes. The secondary outcomes included blood loss, operation duration, pain visual analogue score (VAS) score at 24h postoperatively, auxiliary procedures, complications and hospital stay. The study was registered at http://clinicaltrials.gov / (NCT02519634).

Results: The SFR was significantly higher in the SMP group than in the RIRS group (one-step SFR 94.8% and 75.0%, P = 0.001; overall SFR at 1-month postoperatively 97.4% and 84.2%, P =0.005). The auxiliary procedure rate was lower in the SMP group than in the RIRS group (5.2% vs 25.0%, p =0.001). RIRS is superior to SMP in terms of lower haemoglobin drop (10.2 vs 4.3 g/L, P < 0.001) and less postoperative pain (2.0 vs 1.3, P = 0.008). There was no significantly difference in the operating time and hospital stay. The overall complication rates were similar in the two group studied.

Conclusion: SMP and RIRS are safe and feasible surgical options in the treatment of 1 to 2 cm LP renal calculi. SMP provides overall significantly higher SFR and lower auxiliary rate compared with RIRS, with no differences in surgical time and hospital stay, whereas RIRS is superior in terms of lower haemoglobin drop and less postoperative pain.

MP-06.08

Comparison of Macroscopic One-Layer Over Number 1 Nylon Suture Vasovasostomy with the Standard Two-Layer Microsurgical Procedure

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Introduction and Objective: To compare the outcomes of macroscopic one-layer vasovasostomy (MOLVV) with those of two-layer microsurgical vasovasostomy (TLMVV).

Materials and Methods: Standard TLMVV was performed in 112 men (Group 1), while MOLVV was performed in 94 patients. All of the MOLVVs were performed with number 1 nylon suture as a temporary stent. The outcome measures were as follows: patency rate, pregnancy rate, operation time, total procedure cost, and complications.

Results: The mean operation duration was 114 ± 10 min for the TLMVV technique, and 74 ± 5 min for the MOLVV procedure (P = 0.024). In patients who underwent vasal patency at 6-month postoperative period, the median sperm density (106/mL) was 28.3 and 27.7 in Groups 1 and 2, respectively (P = 0.62). At the same time, the median total motile sperm count (x 106) was 39.4 and 32.6 in two-layer microsurgical and one-layer macroscopic groups, respectively (P = 0.47). Patency rates were 82.1% in Group 1 and 77.7% in Group 2, which were not significantly different (P = 0.21). The pregnancy rate was 28.4% for patients in Group 1 and 26.7% for patients in Group 2 (P = 0.38).

Conclusions: There were no significant differences in terms of patency and pregnancy rates between MOLVV and TLMVV methods, but the MOLVV

technique offers a decreased cost and operative time, and a simplified procedure.

MP-06.09

Risk Factors for Post Percutaneous Nephrolithotomy Bleed Requiring Angio-Embolization

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Introduction and Objective: Percutaneous nephrolithotomy (PCNL) is an established procedure for the management of large and complex renal calculi. Severe post operative bleeding which require blood transfusion and angio-embolisation is a major concern in cases undergoing PCNL. This study aims to identify the risk factors associated with post PCNL severe bleeding in cases that required blood transfusion and angiographic renal embolization.

Materials and Methods: Case records of 4706 PCNL procedures done between January 2008 to March 2016 were reviewed. All the details including the stone burden, location of stone, site of puncture, number of tracts, Amplatz size, duration of procedure, degree of hydronephrosis and patient characteristics like age, gender, hypertension, diabetes mellitus and renal failure were noted. Data was then compared between PCNL procedures which had severe post PCNL bleed (30) and total number of PCNL procedures (4706). Chi square univariate and regression multivariate analyses were used to analyze the results.

Results: Out of 4706 PCNL procedures, 30 cases (0.63%) required angiographic embolization for severe bleeding. Among these patients, 26 (86.66%) were males and 4 (13.33%) were females with the mean age of 48.63± 13.75 years. Statistical analysis showed significant association between severe bleeding and male sex (p=0.018), diabetes mellitus (p=0.045), renal failure (p=0.022) and lower calyceal puncture (p=0.016). In our study severe bleeding is found to have no significant association with factors such as hypertension, stone burden and location, number of tracts, Amplatz size, degree of hydronephrosis and solitary kidney.

Conclusion: Male patients, patients with diabetes mellitus, patients with renal failure and who underwent lower calyceal puncture are more prone for post PCNL severe bleeding which requires blood transfusion and renal angioembolisation.

MP-06.10

Does the Method of Sterilization Affect the Durability of Digital Flexible Ureteroscope? (Prospective Comparative Study between Cidex and Sterrad)

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Introduction and Objective: The revolution in endoscopic urology was accompanied by a wide variety of sterilization techniques with challenge to determine the effective method that provides long-term durability. We compared the effects of chemical sterilization (CIDEX) and low-temperature hydrogen peroxide gas plasma (STERRAD) on two brand new digital flexible ureteroscope (DFU) (Flex-Xc) using subjective and objective parameters.

Materials and Methods: Over 12-month period, all flexible ureteroscopic procedures performed by two flexible ureteroscopes (Flex-Xc) were prospectively evaluated. The ureteroscopes were assessed for the lower pole access measuring the deflection of the ureteroscope with the working channel empty, accessibility to the kidney and the entire collecting system with ureteral access sheath of different sizes and irrigation flow. Intraoperative data included total operative time, laser power and duration, stone criteria and subjective evaluation of the procedure as well as visibility and maneuverability scores were reported. The end point was when one of the flexible ureteroscopes deemed damaged beyond repair when the endoscope fails the leak test.

Results: A total of 88 patients were randomized either for the 1st flexible ureteroscope (SN# 27403) sterilized with Cidex®OPA (n= 59, 67%) or 2nd ureteroscope (SN # 33027) sterilized with Sterrad (n= 29, 33%). Intraoperative, the 1st DFU was significantly used with a total operative time of approximately 49 hours and laser compared to the 2nd one (p<0.001). In the same context, laser power parameters were significantly different among the two groups (p= 0.003). The irrigation flow rate, subjective evaluation of the procedure, maneuverability, visibility scores and pain score at 6-hours and 1 day postoperatively were relatively similar for both utereroscopes. At the end point of the study, the deflection in up and downward directions for both DFU were measured. The mean deflection loss (up/down) was 11.1/22.2% (30o/60 o) for the 1st DFU and 3.7/11.1% (10 o/30 o) for the 2nd one (p= 0.9). Neither stone burden nor laser duration had a significant impact over the results.

Conclusion: The durability and longevity of the DFU is strongly related to the method of sterilization. Our findings suggest that CIDEX should prioritize Sterrad in sterilization of DFU.

MP-06.11

Effect of Practical Coin Based Demonstration for Patient Education and Use of Headphones on Patient Anxiety Undergoing Extracorporeal Shock Wave Lithotripsy

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Introduction and Objective: We wanted to see the effect of Coin based demonstration for patient education and headphones on patient anxiety during extracorporeal shockwave lithotripsy (SWL).We compared anxiety levels in three patients groups.

Materials and Methods: It was a prospective study in which 105 Patients with renal and ureteric stones were included.All patients included were adults between age of 18 years and 60 years. SWL was done by using using Modulith SL X lithotripter 3rd generation Storz medical equipment (Electromagnetic lithotriptor). Mean age was 38.43±12.42 years. Hemodynamic and respiratory parameters were recorded before and just after the SWL session. All patient State-Trait Anxiety Inventory (STAI) scores were recorded after completion of SWL procedure. In group1, Coin demonstration was used before the procedure for patient education and then headphones were used to cancel noise effects during the SWL. While in second group only head phones were used and in third group neither headphones nor Coin based education was done. In coin based education, a coin was placed on the SWL machine that jumped up when shock waves were delivered to it. Visual analog scale (VAS) was also used in these groups to assess pain scores during SWL procedure.

Results: There was significant difference in the groups in VAS score (4.25±0.61, 5.24±1.23 and 5.61±0.72) .Those who had coin based education and headphones had a STAI-S score of 27.3±6.5, while in patients with only head phones and no coin based education the STAI-S score was 34.34±7.63.In the third group without coin based education and headphones STAI-S score was 49.55±8.26.There was significant difference of STAI-S score between the groups (0.04). Pre procedure blood pressure (mmHg) was 119/76 vs 131/73vs 124/71 in these groups and post procedure blood pressure (mmHg) 122/75 vs 127/82 vs 132/85. Postprocedure pulse rate was 88.9±2.9/minute vs 89.2±3.5/minute. There was much better effect of coin based education on patients resulting in decreased STAI-S score.

Conclusion: Use of coin based practical demonstration for patient education before undergoing SWL procedure results in relieving anxiety of patients during the procedure. More studies regarding other better ways of patients' education may also be explored in future.

MP-06.12

Nonpalpable Testis: A Critical Look with the Laparoscope

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Introduction and Objective: Nonpalpable testes account for approximately 20% of all undescended testes. (1) In this study we review our laparoscopic findings.

Materials and Methods: We performed a retrospective review of all our laparoscopic explorations or nonpalpable testis from September 2012 to September 2016 and focused on testicular position and aspect of the inguinal canal.

Results: We found 55 nonpalpable testis in 44 boys of which 13 already had failed inguinal exploration elsewhere. Laparoscopy in 39 cases showed 19 viable intra-abdominal testes: 47.4% near the internal inguinal ring, 26.3% at the level of the iliac chain, 26.3% were high abdominal. Absence of an intra-abdominal testis was seen in 18 of the 39 testis (46.1%) with vas deferens and testicular vessels crossing the internal inguinal ring in all of these testes. When laparoscopy showed absence of an intra-abdominal testis, 4 open internal inguinal canals were seen. Three of them had a viable testis (75%). In 14 closed inguinal canals, only 5 viable testes were found (35,7%), OR 5.4; 95% CI 0.44 – 66.67; p= 0.163. Of the 13 cases referred after previous surgery, 5 viable intra-abdominal testes were found (38.5%), 5 testes (38.5%) were palpable and re-

ceived inguinal surgery. Three cases did not show a viable testis.

Conclusions: When nonpalpable testes are verified it is important to have a laparoscopic option at hand for diagnostic and therapeutic purposes. Although most viable intra-abdominal testes are located near the internal inguinal ring, 51.4% are on or above the iliac vessels, making it difficult to reach with open surgery. For those cases a minimal invasive laparoscopic

MP-06.13

Efficacy of Sacral Roots Neuromodulation in the Treatment of Bladder Pain Syndrome/Interstitial Cystitis in Both Men and Women

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Introduction and Objetives: Sacral roots neuromodulation is suggested as a third-line therapy for bladder pain syndrome/interstitial cystitis (BPS/IC) in EAU Guidelines on Chronic Pelvic Pain. It is also considered as a fourth-line treatment in the AUA Guidelines. Or aim is to report our experience with this technique and the results in the long term.

Materials and Methods: Retrospective multicenter study of 86 patients (65 women and 21 men) with BPS/IC and who underwent sacral neuromodulation for this purpose. The sample was divided by gender in order to compare the results in women (group A) vs. in men (group B). Variables studied: age, medical and surgical background, physical examination, complementary studies, follow-up time, answers to O´Leary-Sant and SF-36 questionnaires prior to treatment and at 3, 6 and 12 months after, and then yearly. Statistical analysis: descriptive statistics, ANOVA, Student's t-test, Fisher's exact test. $p<0.05$ was considered statistically significant.

Results: Average age was different in both groups: 54.3 years in women and 46.8 years in men. There was no difference in the follow-up time (average 2701.60 days, range 365-6430 days). There was no difference between groups in the answers to the O´Leary-Sant and SF-36 questionnaires before treatment. Tined led was removed in 6 women and 4 men because of lack of efficacy or discomfort. The improvement after implantable pulse generator's programming was significantly shown in both disease-specific and quality of life tests. This beneficial effect was maintained in the long term.

Conclusions: Patients with BPS/IC require tailored and combined treatment strategies. A significant benefit was achieved with sacral roots neuromodulation in both men and women, also in the long term.

MP-06.14

Robotic Boari Flap: Management of Complicated Ureteral Strictures

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Introduction and Objective: The Boari flap remains a good surgical technique in the management of ureteral strictures that are not amenable to ureteroneocystostomy or ureteroureterostomy. We present our experience with the robotic Boari flap technique from 2011 to 2017.

Materials and Methods: A retrospective review was performed at a single institution. Patient demographics and pre-operative information were collected. Key aspects of our robotic technique: Prior to surgery, a 5 Fr ureteral catheter is placed into the bladder alongside the Foley catheter. A wide base for the bladder flap is maintained to maximize the blood supply to the flap. To maintain flap length, it is tubularized over a 22 Fr red rubber catheter with interrupted absorbable sutures. The flap is additionally pexed to the psoas muscle, as needed, to maintain a tension-free anastomosis to the ureter. By advancing the ureteral catheter into the red rubber catheter, a guidewire can be advanced easily into the renal pelvis for subsequent retrograde placement of the ureteral stent. The distal curl of the stent can be visualized in the bladder prior to cystorrhaphy.

Results: There were 9 robotic Boari flaps performed between April 2011 and January 2017. Etiologies include post-surgery strictures (n = 4), urolithiasis (n = 2), radiation (n = 1), retroperitoneal fibrosis (n = 1), and idiopathic (n = 1). Three were converted to open surgery because of failure to progress secondary to extensive periureteral fibrosis. These cases occurred during the early part of the robotic learning curve. Mean age was 52.4. Mean BMI was 30.6. Median EBL was 50 mL, median op-time was 479.5 minutes (including cystoscopy portion), and median post-op length of stay was 3 days. There were no post-operative hospital readmissions. One of the patients had previously undergone a Boari flap with another urologist with recurrence of ureteral stricture and underwent redo robotic Boari flap. No recurrences of ureteral stricture were noted in our series to date.

Conclusion: Robotic Boari flap is a challenging surgical procedure that, in experienced hands and appropriate patient selection, has good surgical outcomes with low ureteral stricture recurrence. Prior to undergoing such a procedure, patients should be carefully counseled about the risks of conversion to open surgery.

MP-06.15

Robotic Ureteroneocystostomy: A Minimally Invasive Treatment Option

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Introduction and Objective: Lower ureteral injury is a known sequelae of gynecological, colorectal, and urologic procedures. The management of these adverse events is the responsibility of the urologist. Robotic-assisted surgery has allowed urologists to perform reconstruction in a minimally invasive fashion. This abstract delineates our experience with robotic ureteroneocystostomy from 2008 to 2017.

Materials and Methods: A retrospective review of robotic assisted lower ureteral injury was performed at a single institution. Patient demographics and pre-operative information were collected. Our technique includes the following: for patients presenting in a delayed fashion, they underwent nephrostomy tube placement. Prior to surgery, the tubes were exchanged for a nephroureteral catheter to facilitate intraoperative identification of the strictured distal ureter. (For patients presenting in an acute manner within 72 hours after injury, they underwent cystoscopy, retrograde pyelogram, and attempt at ureteral stent placement.) During the ureteroneocystostomy, the bladder was dissected free of lateral attachments. If further length was required, a psoas hitch was performed to ensure tension-free anastomosis. Periureteral tissue was preserved to maintain the blood supply to the ureter. Foley catheter and ureteral stent were left indwelling for 10 days and 6 weeks, respectively.

Results: There were 26 robotic ureteroneocystostomies performed between June 2008 and March 2017, with 9 additionally undergoing a psoas hitch. Etiologies included post-surgery (n = 15; including 11 secondary to complications from hysterectomy), idiopathic (n = 6), sequelae to urolithiasis (n = 3), endometriosis (n = 1), and neuroendocrine tumor (n = 1). Ratio of male to female was 7:19. Mean age was 50.8. Mean body mass index was 27. Median estimated blood loss was 50 mL, median operative time was 260 min, and median post-operative length of stay was 1 day. There were no intraoperative complications. None was converted to open surgery. One patient developed small bowel obstruction from an adhesive band in the early post-operative period and underwent exploratory laparotomy. None had recurrence of ureteral stricture to date.

Conclusion: Robotic ureteroneocystostomy mimics the open surgical approach in technique and results. This minimally invasive surgical procedure is preferred by the referring surgeon to minimize the sequelae of intraoperative complications.

MP-06.16

Robotic Ureterolysis and Ureteroureterostomy for Managing Ureteral Strictures

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Introduction and Objective: Surgical management of upper ureteral strictures has historically been opened surgical. We present our robotic experience with ureterolysis and ureteroureterostomy from 2007 to 2017 and highlight technical modifications to maximize success.

Materials and Methods: Retrospective review of transperitoneal robotic ureterolysis and ureteroureterostomy was performed at a single institution. Patient demographics and pre- and post-operative information were collected. For ureterolysis, after mobilizing the ureter, peritoneum is reapproximated posterior to the ureter to move the ureter intraperitoneal. Perinephric fat is used to wrap the ureter to reduce the risk of re-fibrosis. For ureteroureterostomy, retrograde pyelogram is performed, and a ureteral catheter is advanced to the level of the ureteral stricture and secured to Foley catheter. Diseased ureteral segment is excised, the ureter spatulated and reanastomosed over a stent.

Results: Of 18 patients, 5 underwent ureterolyses and 13 ureteroureterostomies between May 2007 and March 2017. Etiologies of ureteral obstruction for ureterolysis were RPF (n = 4) and extrinsic compression (n = 1). Etiologies of ureteral stricture for ureteroureterostomies were: sequelae of urolithiasis (n = 9), idiopathic (n = 1), low-grade urothelial carcinoma (n = 1), retrocaval ureter (n = 1), and surgery (n = 1). Mean age 53.9 and mean BMI 32.1. Median EBL 100 mL, median op-time 259 min, and median post-op stay 1 day. One patient had urinoma that was drained percutaneously. One patient underwent simple nephrectomy 18 months after ureteroureterostomy because of recurrent nephrolithiasis in a poorly functioning kidney. Overall success was 94.4%.

Conclusion: Robotic ureterolysis with intraperitonealization and ureteroureterostomy can be performed with minimal morbidity, including those with obesity at baseline, and with good long-term outcomes.

MP-06.17

A New Concept of Urethral Compression Male, Circumferential and Readjustable, Through a Sling of 4 Arms (2 Pre and 2 Retropubics)

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Introduction and Objective: Successful treatment of stress urinary incontinence in men depends on adequate repositioning and compression of the bulbar urethra. Current slings based on suburethral or transobturator suspensions only produce compression under the urethra leaving the rest of the circumference free without any additional pressure.

Materials and Methods: A new 4-arm sling that produces simultaneous suburethral and supraurethral compression by raising it against the lower border of the pubis was placed in five patients since March 2016.

Results: The placement did not suppose any problems added to the placement of the standard suburethral MRS sling. The passage and adjustment of the prepubic arms was simple and without complications. All patients are continent and needed only 1.2 readjust (average). One patient had infection of the surgical suprapubic plate but the rest of the system remain in place and patient still continent but loose the possibility of further readjustment. At present there are systems of four arms that are not readjustable and others that maybe readjusted but only have 2 points of anchorage or tension. The development of a sling combining both characteristics could be a significant advance in this field.

Conclusion: The postoperative placement and adjustment of the tension of the new sling does not entail any additional complication with respect to the standard MRS. Superior incontinence control is expected for its novel double way of compressing the urethra, the demonstration of which will involve future clinical trials.

MP-06.18

Prostate Radiofrequency Ablation Focal Treatment (proRAFT): Interim Results of a Prospective Development Study

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Introduction and Objective: Radiofrequency ablation (RFA) using a bipolar coil design (Encageâ„¢ device) which acts as a Faraday cage offer the versatility needed to perform focal treatment of localised prostate cancer whilst sparing critical anatomical and functional structures. We report preliminary outcomes of our ethics approved prospective development study investigating focal Encageâ„¢ ablation (NCT02294903). Our primary objective was to determine the ablative efficacy 6 months after bipolar RFA. Secondary objectives included the assessment of genito-urinary toxicity.

Materials and Methods: Twenty one men who had multi-parametric MR-visible index lesion concordant with transperineal biopsies and absence of clinically significant disease elsewhere with PSA /=5mm using elastic image-fusion (SmartTargetÂ® platform). mp-MRI transperineal targeted biopsies of the ablated zone and any new suspicious areas were carried out at 6 months.

Results: Twenty men were treated; none were eligible for active surveillance. Data are available for 15 patients treated and followed up to 6 months. Patient characteristics are presented in Tab1. No significant residual disease was found in 13/15 patients. Two had clinically significant cancer of 6mm Gleason 7 (3+4) and 4mm Gleason 6, with one of these undergoing a retreatment. One harboured insignificant disease (1mm Gleason 6; pre-RFA 8 mm Gleason 7). Median PSA (IQR) at 6 months post RFA was 3.1 (1.2 to 4.8) ng/mL. Two patients showed decrease function in term of leakage (1 patient needed a urethral dilatation for stricture). For pad use, 3/15 patients started to use pad. IPSS changed from 9.2 to 8.9 and IPSS quality-of-life from 1.86 to 1.8. Across the 11 patients declaring in IIEF questionnaires some sexual stimulation, 2 patients with already poor erectile function had some decrease at the point to not be sufficient for penetrations. Erectile and bowel functions remained stable, as measured by the IIEF-15 and UCLA-EPIC bowel domain, respectively. EQ-5D and the FACT-P remained stable. There were 4 serious adverse events, none related to the procedure.

Conclusions: RFA using a bipolar device (Encageâ„¢) showed promising early disease control and a low profile of genito-urinary toxicity. Trial completion to one-year follow-up is awaited and further phase II multicentre trials will be needed.

MP-06.18, Table 1.

Population n	15
Median age (range)	67.4 (50.2 to 73.6 y)
Gleason Score 6 (Maximum Core Lenght-MCL)	1 (7mm)
Gleason Score 7 (3+4) (median MCL)	13 (8mm)
Gleason Score 7 (4+3) (MCL)	1 (3mm)
Baseline median PSA ng/ml (IQR)	8.3 (5.1 to 9.8)
6 months median PSA ng/ml (IQR)	3.1 (1.2 to 4.8)
Preoperative median MRI volume of lesion cm^3 (IQR)	2.8 (1.5 to 6.1)
mpMRI Index Lesion Location (n)	posterior (6)
	anterior (9)
Number of patient with negative biopsy	
For significance cancer (UCL definition 2)	13/15
For any cancer	12/15
Number of patient with significant positive biopsy (UCL definition 2)	2/15
Patient with sexual stimulations leading to erection sufficient for intercourse	11/13
Decrease in urinary function (EPIC) for leakage	2/13

MP-06.19

Percutaneous Ureteroscopy Laser Unroofing-A Minimally Invasive Approach for Renal Cyst Treatment

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Introduction and Objective: To assess the safety and efficacy of a novel technology referred to as percutaneous ureteroscopy laser unroofing in the management of renal cysts.

Materials and Methods: From November 2014 to October 2016, 71 patients having surgical indications with renal cysts were enrolled and evaluated with ultrasonography and CT scan. Of all the 71 patients, include 6 patients with parapelvic cysts and 5 patients with renal cyst complicated with ipsilateral renal calculi. All of the patients received combined spinal and epidural analgesia or paravertebral nerve

block anesthesia. Patients were placed in the prone position for percutaneous puncture and tract dilation. Under ultrasound guidance, an eighteen-gauge needle was placed inside the cyst cavity, and a guidewire was introduced followed by sequential dilation up to 28F. The extra-parenchymal portion of cyst wall was dissociated and incised using either a Thulium or Holmium laser, and a pathological examination was performed. Renal calculi were treated simultaneously. For parapelvic cysts patients, laser was used to incise cyst wall towards identified pelvis to create a permanent communication between the cyst and adjacent renal collecting system. F6 double-J stent was inserted into the cyst cavity at the end to prevent auto-closure for at most two months. 22F nephrostomy tube was left in renal pelvis for a duration of two weeks. More than 50% reduction in cyst volume was considered a success. The perioperative complications, hospitalization days and the effective rate of surgery were evaluated.

Results: All operations were conducted without intraoperative complications. The hospital stay after the surgery was 2-4 days (mean 2.5 days). Mean of 11.7 months follow-up, the results showed that the cyst was completely resolved in 53 patients, its size was reduced to less than 50% in 15 patients, and treatment failed in only 3 anterior cyst patients

Conclusions: Percutaneous ureteroscopy laser unroofing is an effective and less invasive alternative for treatment of renal cysts in selected patients.

Moderated ePosters Session 7 Prostate Cancer: Detection, Screening, and Staging

Saturday, October 21
1415–1545

MP-07.01

Novel Classification of Gleason 7 Prostate Cancer According to the Discrepancy between Biopsy and Final Gleason Score after Radical Prostatectomy

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Introduction and Objective: We evaluated the pathologic Gleason 7 prostate cancer according to the risk of biochemical recurrence by the discrepancy between biopsy and pathologic Gleason score.

Materials and Methods: A total of 1678 consecutive patients who had biopsy proven prostate cancer and underwent radical prostatectomy were retrospectively reviewed from two prospectively collected prostate cancer databases. Clinicopathological data in the medical records were retrospectively reviewed. We compared 6-stage and 3-stage of classification of Gleason 7 prostate cancer depending on the discrepancy between biopsy and pathologic Gleason score; 6-stage: GS≤6/3+4, GS3+4/3+4, GS4+3≥/3+4, GS≤3+4/4+3, GS4+3/4+3, GS8≥/4+3; 3-stage: Upgraded GS3+4, Intermediate GS7, Downgraded GS4+3; Kaplan-Meier survival curve and multivariate models were developed to examine the influence of classification of Gleason 7 prostate cancer on the risk of biochemical recurrence.

Results: In 6-stage classification, except GS≤6/3+4 and GS8≥/ 4+3 group, the other groups were not significantly different to each other. On the other hand, in 3-stage classification, the clinicopathological parameters were statistically diacritical among upgraded GS3+4, intermediate GS7 and downgraded GS4+3. In multivariate analysis, 3-stage classification generated significantly differentiable Kaplan-Meier survival curve and multivariate model.

Conclusion: Novel 3-stage classification of pathologic Gleason 7 prostate cancer according the discrepancy between biopsy and pathologic Gleason score is simple and useful to predict the risk of biochemical recurrence.

MP-07.02

Impact of Canadian Task Force on Preventative Health Care Recommendation Against PSA Screening on Radical Prostatectomy Results

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Introduction and Objective: Following a similar recommendation by its American counterpart, the Canadian Task Force on the Preventative Health Care (CTFPHC) produced a guideline recommending against standard screening for prostate cancer (PCa) with prostate-specific antigen (PSA) in 2014. There has been concern that decreased PSA use in primary care might result in higher risk disease and adverse outcomes. Our objective was to determine if there were fewer radical prostatectomies performed at our centre, and if there had been a clinical and pathological upward stage migration after the recommendation.

Materials and Methods: Characteristics of men undergoing radical prostatectomy (RP) by a single surgeon at a large Canadian centre were prospectively collected between 2012 and 2015 in a database. Age, preoperative PSA, and D'Amico classification, prostate mass, Gleason score (GS), pathological stage, margin positivity and tumour volume were recorded. Nominal and ordinal data were compared using Pearson's chi-squared test. Continuous variables were non-parametric and therefore compared with independent-samples Kruskal-Wallis test.

Results: Out of 344 prostatectomies performed between 2012 and 2015, D'Amico risk group, GS, pT3 rates, and mean tumour volume were all significantly increased. There were no statistically significant changes in age, PSA values, prostatic volume, SVI rates, or PSM rates. There was a trend toward higher node positivity. There was a year-on-year reduction in total number of RRPs performed (see Table 1).

Conclusion: Between 2012 and 2015, there was a significant upward stage migration in prostate cancer treated by radical prostatectomy by a single surgeon. The 2012 USPSTF and 2014 CPSTF recommendations might have resulted in referral of fewer screen-detected patients, and fewer with low risk disease. Part of the change may also be related to greater uptake of active surveillance among low risk patients, as well as a greater willingness to offer surgery, as part of multi-modal treatment, to high risk patients.

MP-07.03

Comparison of Multiparametric and Biparametric MRI Cognitive Targeted First Round Prostate Biopsy for Patients with a PSA Level under 10 Ng/Ml

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Introduction and Objective: To determine the efficacy of cognitive targeted prostate biopsy using biparametric magnetic resonance imaging (b-MRI) for patients with a PSA level under 10 ng/ml.

Materials and Methods: We reviewed data from 123 consecutive male patients who underwent cognitive targeted prostate biopsy using prostate MRI in 2016. Of these patients, the first 55 underwent prostate biopsy using multiparametric MRI (mp-MRI), and the remaining 68 underwent prostate biopsy using b-MRI. For b-MRI, we only performed T2 weighted axial imaging and diffusion-weighted imaging sequences. We found that 62 of the 123 men had suspicious lesions on MRI (32 of the 55 men in the mp-MRI group and 30 of the 68 men in the b-MRI group). We compared the prostate cancer detection rates and the proportions of clinically significant prostate cancer between the different MRI sequences.

Results: The mean PSA level was 6.7 ng/ml in the mp-MRI group and 6.2 ng/ml in the b-MRI group. Between the two MRI groups, there were no statistically significant differences in prostate cancer detection rate or proportion of clinically significant prostate cancer (41.8% vs. 30.9%, p=0.208 and 82.6% vs. 76.2%, p=0.598). Among the 62 men who had sus-

MP-07.02, Table 1.

		2012	2013	2014	2015	p-value
n		104	90	80	70	
Age (mean)		62.8	62.7	63.6	64.9	0.161
PSA (median)		6.3	6.8	6.9	7.0	0.210
D'Amico Risk Group (%)	Low	34 (32.7%)	15 (16.7%)	12 (15.0%)	4 (5.7%)	**<0.005**
	Intermed	60 (57.7%)	49 (54.4%)	42 (52.5%)	47 (67.1%)	
	High	10 (9.6%)	26 (28.9%)	26 (32.5%)	19 (27.1%)	
Prostate weight (g, median)		37.0	38.7	38.0	41.8	0.748
Gleason score	≤6	17 (16.3%)	2 (2.2%)	1 (1.3%)	0 (0%)	**<0.005**
	3+4	64 (61.5%)	60 (66.7%)	44 (55.0%)	37 (52.9%)	
	4+3	17 (16.3%)	17 (18.9%)	26 (32.5%)	23 (32.9%)	
	≥8	6 (5.8%)	11 (12.2%)	9 (11.3%)	10 (14.3%)	
Pathological T3+		33 (31.7%)	59 (65.6%)	53 (66.3%)	46 (65.7%)	**<0.005**
Positive surgical margins	Total	22/104 (21.2%)	29/90 (32.2%)	26/80 (32.5%)	25/70 (35.7%)	0.143
Seminal vesicle invasion		11 (10.6%)	18 (20.0%)	18 (22.5%)	13 (18.6%)	0.151
Proportion of prostate involved (median)		10.0%	15.0%	15.0%	15.0%	**0.024**
Pathological N+		2 (1.9%)	7 (7.8%)	5 (6.3%)	8 (11.4%)	**0.081**

picious lesions on MRI, the prostate cancer detection rates were 62.5% and 63.3% (p=0.709) in the mp-MRI and b-MRI groups, respectively, and the proportions of clinically significant prostate cancer were 95.0% and 84.2% (p=0.267).

Conclusion: Prostate biopsy using b-MRI showed similar performance to that using mp-MRI for prostate cancer detection and clinically significant prostate cancer detection in patients with a PSA level under 10 ng/ml. Considering the satisfactory performance and cost effectiveness of b-MRI, this technique could be a good option for obtaining intraprostatic information for first round prostate biopsy.

MP-07.04

Comparison of 68Ga-PSMA-PET-CT with Multiparametric MRI for Staging High Risk Prostate Cancer

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Introduction and Objective: Glu-NH-CO-NH-Lys-(Ahx) [Ga-68(HBED-CC)]) (Ga-68 PSMA 11) is a positron emission tomography (PET) imaging agent that is increasingly being evaluated for staging of prostate cancer, localizing recurrence in patients with biochemical relapse and metastases in patients with castration resistant prostate cancer. We undertook this study to compare Ga-68 PSMA 11 PET/CT with multiparametric MRI for the staging of high risk prostate cancer.

Materials and Methods: From Jan 2015 to October 2016, 36 patients with high-risk prostate cancer were included. The inclusion criteria were biopsy proven prostate cancer with a serum PSA ≥20 and/or Gleason's Score ≥8. Each patient underwent both Ga-68-PSMA-PET-CT and multiparametric MRI within one week. Both modalities were compared in terms of staging of primary disease, lymph node and bone involvement. The prostate gland was divided into twelve segments. The segment with the highest SUVmax and lowest ADC value was taken as primary site. Concordance between this primary and uptake on Ga-68PSMA-PET-CT was checked. Concordance was also checked for extension into seminal vesicle(s), regional and systemic lymph nodes, skeletal sites, liver and lungs.

Results: Median age was 65years (range: 44-80 years), median PSA was 94.3 ng/ml (range 20-19005 ng/ml). Concordance for localization of primary on Ga-68-PSMA-PET-CT & MRI was seen in 19/36 (52.7 %). PET was incorrect for seminal vesicle involvement in 8 patients. Capsular involvement could not be commented upon on PET. T staging on Ga-68-PSMA-PET-CT and MRI was similar in 21/36 patients (58.3%) and differed in 15/36 patients (41.7%). Ga-68 PSMA PET/CT detected higher number of patients with regional (29) and non-regional (15) lymph nodes in comparison to MRI (20 and 5 respectively). Concordance for regional lymph node staging was seen in 25 patients (69.4%) and for non-regional lymph node staging in 26 patients (72.2 %). In one patient Ga-68-PSMA-PET-CT reported skeletal metastases which was not seen on MRI. Ga-68-PSMA-PET-CT detected distant metastases involving lung (2 patients) and liver (1 patient) not seen on MRI. In comparison to MRI, Ga-68-PSMA-PET-CT changed M stage from M0 to M1a in one patient, from M0 to M1b in 1 patient and from M1b to M1c in 3 patients.

Conclusion: In comparison to MRI, Ga-68 PSMA PET/CT was able to detect more lymph node (both regional and non-regional) involvement as well as metastases. It was also useful for localization of primary however concordance for primary localization with MRI was limited and so was the depiction of capsular invasion and seminal vesicle involvement.

MP-07.05

GA-PSMA-PET/CT vs Choline-PET/CT in Malignant Prostate Cancer – A Systematic Review

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Introduction and Objectives: Recently the role of Prostate-specific membrane antigen-positron emission tomography/computed tomography (PSMA-PET/CT) has become more prominent in helping to diagnose recurrent prostate cancer and malignant prostate cancer. The role of PSMA as a radiotracer appears to be surpassing that of choline tracers in prominent centres. We have evaluated current data regarding the use of PSMA-PET/CT scans compared to Choline PET/CT scans.

Materials and Methods: We performed a review of PubMed/Medline, Clinical trials.gov and the Cochrane Library in March 2017 according to the Preferred Reporting Items for Systematic Review and Meta-analysis (PRISMA) statement.

Results: Four studies were included in this review having directly compared 68GA-PSMA-PET/CT and Choline PET/CT scans. Choline tracers used were 11C in one study and 18F in the other studies. Overall 230 men had both 68GA-PSMA PET and choline-PET/CT scans. Overall detection rates for biochemical recurrence were 81.1% for GA-PSMA-PET and 70.3% for choline-PET/CT. This indicates that GA-PSMA PET/CT is significantly better than choline-PET/CT for detecting recurrence of prostate cancer (P<0.005). 68GA-PSMA-PET/CT also showed higher detection rates at lower PSA values. Lesions missed on PSMA-PET/CT but captured by choline-PET/CT were found to be negligible (1-2%).

Conclusion: 68GA-PSMA-PET/CT appears to offer better diagnostic capability than choline-PET/CT, as well as similar if not higher sensitivities and specificities, indicating justification for replacing choline as the radiotracer of choice in prostate cancer and guiding further management decisions.

MP-07.06

Presence of Only Clinical Stage Ct2c Is Not Sufficient to Be Classified as High Risk Prostate Cancer

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Introduction and Objectives: According to the EAU guidelines cT2c stage is classified as high risk prostate cancer; however most patients with presence of only cT2c and no other negative prognostic factors have better outcomes after local therapy. The aim of the study was to assess prognostic factors of biochemical recurrence (BR) in subgroup of prostate cancer (PC) pts with cT2c stage.

Materials and Methods: Retrospective analysis of 1864 PC pts undergone radical prostatectomy (RPE) was done. Clinical stage was T1b-T2c in 1457 (78.2%), T3a-T3b – in 407 (21.8%) pts. Stage cT2c was verified in 747 (40.1%) and prognostic factors of disease progression were assessed in this subgroup of patients. Mean PSA level in cT2c group was 17.8±16.9 ng/ml; mean percentage of positive biopsy cores was 55.8±28.4%. Biopsy Gleason score 6 was verified in 398 (53.3%) pts; 7 (3+4) – in 172 (23.0%); 7 (4+3) – in 83 (11.1%) and 8-10 – in 68 (9.1%); not assessed in 26 (3.5%) pts. To stratify patients according risk group in cT2c subgroup standard risk classification was used without cT stage consideration. Intermediate risk PC (PSA 10-20 ng/ml, biopsy Gleason score 7) was verified in 541 (72.4%) pts; high risk PC (PSA >20 ng/ml, biopsy Gleason score 8-10) – in 206 (27.6%) pts. Low risk PC was not observed among cT2c pts. Biochemical recurrence (BR) was assessed as elevation of PSA>0.2 ng/ml on three consecutive measurements.

Results: Morphological stage downgrading to pT2a-T2b was found in 26 (3.5%) pts and stage upgrading to ≥pT3a was observed in 329 (44%) pts. Lymph node (LN) metastases were found in 124 (16.6%) pts. In intermediate risk subgroup LN metastases were observed in 69 of 541 (12.8%) pts and in high risk – in 55 of 206 (26.7%) pts (p<0.001). Mean follow up was 35.5±33.1 months (3-174). BR was observed in 119 (16%) pts. 5-year and 10-year biochemical progression-free survival (BPFS) were 60±3.5% and 42.4±5.9%, respectively. 10-year overall and cancer-specific survival were 84.3±6.3% and 93.5±8.9%, respectively. In patients with cT2c and absence of any other negative predictors BPFS was almost 2-fold higher. Thus, 5-year BPFS in subgroup of intermediate and high risk PC in patients with cT2c was 68.9±3.1% and 39.1±4.3%, respectively (p=0.002). PSA, biopsy Gleason score and percentage of positive biopsy cores were predictors of outcome in cT2c cohort. In subgroup of pts with PSA ≤10 and >10 ng/ml 5-year BPFS was 73.3±4.5% and 50.7±5.9%, respectively, p=0.001. In pts with PPBC ≤50% and >50%, 5-year BPFS was 70.1±3.9% and 52.2±4.7%, respectively, p=0.002. In pts with biopsy Gleason ≤6, 7 and 8-10 difference in BPFS was also significant (p=0.001). Independent preoperative predictors of BR in multivariate Cox regression analysis in cT2c subgroup of pts were percentage of positive biopsy cores (OR=1.9; 95%CI=1.3-2.8; p=0.002) and biopsy Gleason score (OR=1.29; 95%CI=1.1-1.6; p=0.09).

Conclusions: Clinical assessment of high risk PC is important for patient's stratification and should be done using multiple clinical parameters. Using of only cT2c stage without other negative predictors of high risk PC could lead to incorrect stratification. Most important clinical prognostic factors in cT2c cohort of patients were percentage of positive biopsy cores and biopsy Gleason score. Adding these parameters in

consideration could help to better stratifying patients with high risk PC.

MP-07.07

Automatic Grading of Prostate Cancer using the Gleason Grading groups

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Introduction and Objective: Prostate cancer (PCa) grade in the diagnostic biopsy is an important determinant of patient management. The Gleason grading groups (GGG) are recently introduced for grading of prostate cancer. This new scoring system is subject to a similar inter-observer agreement as the Gleason score (60%). Computer aided diagnosis systems using convolutional neural networks (CNN) have shown to approach human performance in diagnosing skin disease, while reducing inter-observer variability. A CNN learns to recognize patterns from a gold standard and distinguish preset categories. By using a CNN on digital histology slides, it can learn to detect abnormalities and give an indication of likelihood of tumor presence. The aim of this study is to explore the accuracy of a CNN for grading of prostate biopsies using the recently introduced GGG.

Materials and Methods: H&E stained formalin fixed paraffin embedded core biopsies from ten patients were digitized using the Philips UltraFast Scanner at 20x magnification. The gold standard was a set of manual annotations, confirmed by a urinary tract pathologist. The CNN was trained on 150 annotated biopsy fragments to differentiate between the Gleason scores. The GGG were constructed out of the two Gleason grades with highest percentages, dividing grade groups 1, 2 and ≥3, based on the clinical consequence. A test set, which consisted of 15 biopsy fragments that were not used in the training of the CNN, was generated. The accuracy was calculated by dichotomizing the grading of the test set, in order to separate the different treatment groups, and comparing this result to the classification in the pathology report.

Results: In distinguishing GGG ≤I from ≥II, the CNN shows a sensitivity, specificity and accuracy of 65%, 93% and 75%, respectively. Distinguishing GGG ≤II from ≥III shows a sensitivity, specificity and accuracy of 100%, 67% and 73% respectively.

Conclusion: This feasibility study shows the potential value of a CNN in the grading of PCa.

MP-07.08

Prostate Cancer Can Be Detected Even in Patients with Decreased PSA after Antibiotic Therapy

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Introduction and Objective: Prostate Specific Antigen (PSA) can be elevated in the presence of prostate cancer or prostatitis, so recently in the case of the decrease of PSA after the administration of antibiotics, the cautious prostate biopsy often raised due the possibility of prostatitisis. The authors tried to evaluate the possibility of deciding the implementation of the biopsy by whether the PSA has been decreased or not after the administration of antibiotics by comparing the biopsy positive rate of the patients with decreased PSA after administrating antibiotics and the patients who underwent the biopsy right after without the administrating antibiotics.

MP-07.08, Table 1. Patients Characteristics and Biopsy Positive Rate in Group I and Group II

	Group I	Group II	P-value
Age (Mean ± SD)	67.1±9.3	65.3±8.7	0.326
initial PSA (Mean ± SD)	5.95±2.09	7.03±1.94	0.010
TRUS(Mean ± SD)	43.81±22.80	49.27±24.78	0.197
Positive rate (%)	30.5	28.6	0.767

MP-07.08, Table 2. Comparison Pathologic Characteristics between Group I and Group II

Gleason grade	Group I	Group II
6	12 (33.3%)	16 (66.7%)
3+4	18 (50%)	4 (16.7%)
4+3	0 (0%)	0 (0%)
>=8	6 (16.7%)	4 (16.7%)
Total	36	24

Materials and Methods: This study was conducted for 262 people with PSA more than 2.5 ng/ml and less than 10ng/ml who does not have any unusual remark at the digital rectal examination. Among these, the patients who were able to observe the PSA progress after the administration of antibiotics with their consent were 144, and the patients who underwent the biopsy right after were 118. The subject groups were classified into three groups; Group I who carried out the biopsy right after without the administration of antibiotics, Group II with and Group III without PSA reduction after administrating antibiotics (Fig.1). Clinical characteristics and cancer detection rate between group I and group II were compared and analyzed

Result: Total patients were 262; 118 in Group I (45%), 84 in Group II (32%), and 60 in Group III (23%). The biopsy positive rate is 30.5% in Group I, 28.6% in Group II, there were no significant difference in biopsy positive rate between Group I and II (Table 1, 2).

Conclusion: From the patients with decreased PSA after the administration of antibiotics, the similar biopsy positive rate was found like the patients who had the biopsy right after, so deciding the biopsy implementation to the patients with PSA more than 2.5 ng/ml and less than 10 ng/ml by whether PSA is decreased or not after the administration of antibiotics should be considered very cautiously.

MP-07.09

Correlation between Multiparametric MRI PIRADS Scores and Prostate Carcinoma Grade Grouping on Transperineal Template +/- Targeted Biopsy

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Introduction and Objective: We correlated 3T multiparametric MRI PIRADS results with transperineal template biopsy grade group scores. This data was also used to produce sensitivity and specificity results of 3T multiparametric MRI for the detection of clinically significant prostate cancer (Grade Group 2 or greater).

Materials and Methods: Between January 2013 and March 2017, we stored 1733 PIRADS-scored multiparametric MRI reports from a single radiologist in a prospective database. 762 men subsequently underwent 806 transperineal template biopsies within 12 months of their MRI, with MRI-biopsy targeting performed in 45.3%. Their pathology reports were prospectively stored in the same database and used as the comparator. PIRADS scores of 4 or 5 were considered positive, PIRADS 1 or 2, negative, and 96 PIRADS 3 scores, representing an equivocal result, were removed to yield 710 data points for sensitivity and specificity analysis.

Results: We calculated sensitivity and specificity results of 85.6% (95%CI: 81.80% to 88.94%) and 67.5%

MP-07.09, Table 1. Grade Group (GG) Results by PIRADS Scores

	Benign	GG1	GG2	GG3	GG4	GG5
1	7	2	1	0	0	0
2	115	84	47	6	3	0
3	34	27	26	7	2	0
4	33	37	89	37	11	5
5	10	20	89	68	14	27

MP-07.09, Table 2. Calculated Sensitivity and Specificity Results

True Negatives	False Negatives	True Positives	False Positives
208	57	340	100
Sensitivity	Specificity	PPV	NPV
85.64%	67.53%	77.27%	78.49%

(95%CI: 61.99% to 72.73%) respectively for the detection of clinically significant prostate cancer. Table 1: Grade Group (GG) results by PIRADS scores. Table 2: Calculated Sensitivity and Specificity Results

Conclusion: In a large sample size, we demonstrated sensitivity and specificity values for multiparametric MRI against a cohort of transperineal template +/- targeted biopsies with a high proportion of targeting. Increasing PIRADS scores correlated with both increased detection of clinically significant disease and higher grade groups.

MP-07.10

Outcomes of Cognitive MRI Targeted TRUS Biopsy of Prostate

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Introduction and Objective: Transrectal ultrasound guided biopsy of prostate (TRUS-BP) is the gold standard diagnostic investigation for patients presenting with an abnormal PSA and/or abnormal digital rectal however carries not insignificant risks. Use of multiparametric MRI has been evolving over the past decade with various methods of performing targeted TRUS-BP -the simplest is cognitive MRI targeting with visual registration of regions of interest. We performed a retrospective analysis of cognitive MRI guided TRUS biopsies at a single centre.

Materials and Methods: One hundred and fifty two patients underwent cognitive MRI guided TRUS-BP between 18/6/14 and 4/9/15 performed by a single experienced consultant. Median age was 66.9. Thirteen patients were biopsied as part of active surveillance; 139 patients after presentation with a raised PSA and/or abnormal DRE and had undergone at least one negative TRUS-BP previously. Median PSA in the active surveillance group was 6.2 and 9.6 in the negative biopsy group.

Results: Of the 139 patients who had previous negative TRUS-BP 33 had a cancer detected following cognitive MRI guided biopsy (23.7%). Nine patients had low risk prostate cancer detected, 19 intermediate risks and 5 high risks. Eighteen patients proceeded to undergo radical treatment and 1 commenced ADT. Seven patients entered active surveillance and 6 patients opted for a watchful waiting approach. 1 patient was lost to follow-up. Of the 13 patients in the active surveillance group 5 patients had a negative targeted biopsy and continued on the active surveillance pathway. Of the 8 positive biopsies 4 had had an upgrade of their pathology; 3 went on to have radical treatment and 1 declined radical treatment.

Conclusion: Patients with a previous negative biopsy but remaining suspicion of prostate cancer are often subjected to multiple biopsies. Uses of cognitive MRI targeted biopsies have been shown to significantly increase the detection of prostate cancer in patients with a previous negative biopsy. In our population cognitive MRI targeted biopsies detected prostate cancer in 23.7% of patients who had previous negative biopsies. Although current literature suggests MRI-TRUS fusion biopsies have higher detection rates than cognitive-guided the equipment is often expensive. Cognitive MRI targeted biopsies are a viable alternative method to increase detection rate.

MP-07.11

Correlation of mpMRI Contours with 3-Dimensional 5mm Transperineal Prostate Mapping Biopsy within the PROMIS Trial Pilot: What Margins Are Required?

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Introduction and Objective: mpMRI offers the possibility to locate cancer in 3-Dimensions and aid surgical planning. We investigated the margin needed around an mpMRI lesion for complete disease control in a prospectively enrolled biopsy naive population who underwent mpMRI followed by Transperineal Prostate Mapping with biopsies taken every 5mm (5TPM).

Materials and Methods: Ninety four patients included in this analysis were part of the pilot phase of Prostate MRI Imaging Study (NCT01292291) investigating accuracy of mpMRI against standard of care with TPM as a reference test. All patients were biopsy-naive with a PSA below 15ng/ml. All patients underwent 1.5T mpMRI with standardized protocol (T2W, Diffusion, DCE), blinded reported using Likert scoring. Each core was separately labelled and oriented in space. Each prostate and MRI lesion was contoured on T2W-imaging, blinded to pathology. A 3D digital map of the TPM was reconstructed using an in-house software. Correlation between mpMRI and biopsy findings was automatically carried out using a platform generating the registration based on landmarks. We report the margin around the MRI lesion as the maximum distance within a set of negative biopsy location surrounding the MRI lesion. Results are also stratified by MRI score, Gleason Score, lesion eligibility to focal therapy and significance.

Results: Forty one patients (median PSA 6.5ng/ml, median age 62) were found to harbour cancer at 5TPM in this cohort, yielding 75 MRI lesions that corresponded to cancer at 5TPM. The median number of MRI lesions per patient was 1.5. As a control of registration, correlation between MRI volume and TPM volume was Ï =0.92 (p<0.001). Lesion characteristics are summarized in Table 1. The mean margin (enclosing a perimeter of negative cores) for MRI lesions corresponding the cancer at 5TPM was 7.0 mm (SD 4.6mm). For lesion eligible for focal therapy (n= 35), the mean margin was 7.3 (SD 4.3mm). The mean Gleason score of biopsy core outside the MRI lesion was 6.7 (+/- 0.5).

Conclusion: Our study is the first to report a margin around a mpMRI lesion when based on prostates that have not been removed using surgery and evaluated against a very accurate 3-dimensional 5mm mapping biopsy. These findings have implications for focal therapy and nerve-sparing surgery.

MP-07.12

Combined Clinical Parameters and Multiparametric MRI for Advanced Risk Modeling of Prostate Cancer - Patient-Tailored Risk Stratification Can Reduce Unnecessary Biopsies

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MP-07.11, Table 1.

	Number of lesion	MRI volume cc (+/- SD)	Margin mm (+/- SD)
All correlated MRI lesions	75	0.25 (0.20)	7.0 (4.6)
MRI lesions score 3	35	0.30 (0.24)	6.3 (3.7)
MRI lesions score 4	16	0.23 (0.19)	7.2 (5.2)
MRI lesions score 5	18	0.19 (0.07)	6.9 (2.5)
UCL def 1 (MCL >6 mm or primary Gleason pattern 4)	75	0.25 (0.20)	6.8 (4.4)
UCL def 2 (MCL >4 mm or Gleason pattern 4)	75	0.25 (0.20)	6.6 (4.0)
Lesion eligible for focal therapy	35	0.32 (0.24)	7.3 (4.3)
Radiological non Diffuse lesion	56	0.20 (0.14)	6.4 (4.0)
Radiological Diffuse lesion	14	0.50 (0.24)	7.8 (2.6)

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Introduction and Objectives: Multiparametric MRI (mpMRI) is gaining widespread acceptance in prostate cancer (PC) diagnosis and improves significant PC (sPC; Gleason score ≥3+4) detection. Decision-making based on European Randomised study of Screening for PC (ERSPC) risk-calculator (RC) parameters may overcome PSA-limitations. We added pre-biopsy mpMRI to ERSPC-RC parameters and developed risk models (RM) to predict individual sPC-risk for biopsy-naïve men and men after previous biopsy.

Materials and Methods: We retrospectively analyzed clinical parameters of 1159 men who underwent mpMRI prior to MRI/TRUS-fusion-biopsy between 2012 and 2015. Multivariate regression analyses were used to determine significant sPC-predictors for RM-development. The prediction-performance was compared to ERSPC-RCs, RCs refitted on our cohort, PI-RADSv1.0 and ERSPC-RC plus PI-RADSv1.0 using receiver-operating-characteristics (ROC). Discrimination and calibration of the RM, as well as net decision and reduction curve analyses were evaluated based on resampling methods.

Results: PSA, prostate volume, digital-rectal examination and PI-RADS were significant sPC-predictors and included in the RMs together with age. ROC area-under-the-curve (AUC) of the RM for biopsy-naïve men was comparable to ERSPC-RC3 plus PI-RADSv1.0 (0.83 versus 0.84) but larger compared to ERSPC-RC3 (0.81), the refitted RC3 (0.80) and PI-RADS (0.76). For post-biopsy men, the novel RM`s discrimination (0.81) was higher, compared to PI-RADS (0.78), ERSPC-RC4 (0.66), refitted RC4 (0.76) and ERSPC-RC4 plus PI-RADSv1.0 (0.78). Both RMs' benefits exceeded that of ERSPC-RCs and PI-RADS in the decision which patient to biopsy and enabled the highest reduction rate of unnecessary biopsies.

Conclusion: The novel RMs, incorporating clinical parameters and PI-RADS, performed significantly better compared to RMs without PI-RADS and provide measurable benefit in making the decision to biopsy men at suspicion of PC. For biopsy-naïve patients both our RM and ERSPC-RC3 plus PI-RADSv1.0 exceeded the prediction-performance compared to clinical parameters alone.

MP-07.13

Transperineal Template-Guided Mapping Biopsy and Multiparametric MRI for Detection of Clinically Significant Prostate Cancer in Patients after Initial Negative Transrectal Ultrasound-Guided Biopsy

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Introduction and Objective: Rising PSA after initial negative prostate biopsy is a dilemma in daily urological practice. In the past years multiparametric MRI (mpMRI) has been used to stratify patient risk of having clinically significant prostate cancer (PCa) and is helpful in omitting unnecessary prostate biopsy. The aim of this analysis was to evaluate the significance of mpMRI on detecting prostate cancer on repeat biopsy if transperineal prostate mapping (TPM) technique is applied.

Materials and Methods: Prospective clinical data of 72 patients with prior negative prostate biopsy and rising PSA level were collected. Patients underwent 1.5T mpMRI with subsequent 20 core transperineal prostate biopsy. Radiological examination was performed according PIRADS 2.0 version. Radiologist scores and location were matched with TPM histopathology of the prostate. The positive (PPV) and negative (NPV) predictive values of mpMRI for ruling out any PCa and clinical significant PCa were calculated.

Results: PCa was detected in 37 (51.4%) and clinically significant PCa in 24 (33.3%) patients. Patient's median age at the time of TPM biopsy was (62.3±6.3), PSA (8.41±4.2) PSA density (0.203±0.18). Almost two thirds of patients underwent first repeat biopsy, 30.4% and 5.7% second and third repeat biopsy, respectively. Calculated PPV and NPV of mpMRI to detect PCa were 45.45% and 39.29% with specificity and sensitivity of 54.05% and 31.43% respectively. For clinically significant PCa PPV and NPV of mpMRI were smaller and reached 27.08% and 57.14% respectively, with sensitivity of 59.09% and specificity of 25.53%.

Conclusion: TPM biopsies detect prostate cancer in over half of the patients with one or more initially negative prostate biopsies and mpMRI is helpful in identifying prostate lesions suggestive of cancer.

MP-07.14

Biojet - Real Time TRUS/MRI Fusion Biopsy of The Prostate: Value of Combining Targeted and Systematic Biopsies

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Introduction and Objective: This retrospective study was conducted to evaluate the performance of perineal Biojet (DK-Medical) magnetic resonance (MR)-ultrasound-guided fusion biopsy in diagnosing prostate cancer (PCa).

Materials and Methods: A total of 210 men underwent 3 Tesla multiparametric MR imaging (mpMRI) and fusion biopsy consecutively (01/2015-01/2017). Only Patientis with a PIRADS-score (Version 1.0 + 2.0) III – V were included in this study. The fusion biopsy was used to obtain targeted cores from the region of interest (ROI) (mean 6.7 Biopsies) followed by a systematic biopsy (mean 8,6 biopsy). Biopsy cores were sent to the pathologist without specification of the PIRADS score and no information was given of where the cores were taken from. Clinical significant prostate cancer was defined by the Epstein criteria.

Results: Among the 210 men 59 (28%) underwent first biopsy whereas 151 Patients (72%) underwent repeated biopsy. The median PSA level was 10.2 ng/ml. The median prostate volume was 58 ml. The mean overall number of biopsies taken was 15.3. The median volume of the ROI was 2.9 ml. The overall cancer detection Rate was 52.9 % (111 pat). When stratified according to PI-RADS score V, IV and III detection rate was 86.4%, 51.6% and 18.9% respectively. Combing target and systemic biopsy resulted in a higher detection of Pca than one method alone. (Targeted-91% vs systematic 41%) 9% of cancers would have been missed by using the target biopsy only. Significant prostate cancer was found in 81% of the positive targeted biopsies and 30% of the positive systematic biopsies.

Conclusions: The Real Time Trus/MRI Fusion Biopsy system -Biojet showed a reliable and reproducible higher detection rate than the systematic prostate biopsy alone while taking fewer cores. Targeted and systematic biopsy in combination detected more Pca than either modality alone. Insignificant prostate cancer was found only in 19% of the fusion biopsies. Due to the additional detection of Pca in the systemic biopsy it should be performed with a target biopsy.

MP-07.15

Atypical Small Acinar Proliferation: Progression to Clinically Significant Prostate Cancer?

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Introduction and Objective: Guideline recommendation for atypical small acinar proliferation (ASAP) diagnosed on prostate biopsy recommends repeat biopsy within 3-6 months after initial diagnosis. We wanted to discern the rate of detecting clinically significant prostate cancer (Gleason grade group ≥2) on subsequent biopsy as well as any predictors associated with progression using the 5 tier Gleason grade grouping system (GGGS).

Materials and Methods: We performed a retrospective chart review of patients who underwent prostate biopsy at the University of Texas Medical Branch at Galveston from 2008 to 2015. GGGS and D'Amico risk stratification were used to report pathology and prostate cancer risk stratification, respectively. Regression analyses and mean comparisons were performed.

Results: A total of 593 patients who underwent prostate needle biopsy were identified, of which 27 (4.6%) had the diagnosis of ASAP. Of these, 11 (41%) had a repeat biopsy. Median time from initial ASAP diag-

nosis to repeat biopsy was 147 days (IQR: 83.5-247.0). Of the 11 patients diagnosed with ASAP, distribution across the GGGS on follow-up biopsy is as follows: 7 (63.6%) benign, 3 (27.3%) GG1 prostate cancer and one (9.1%) GG2 prostate cancer. In a logistic regression analysis, ASAP was not associated with subsequent diagnosis of prostate cancer (OR=0.46, 95% CI: 0.064 to 3.247, p=0.432). In a linear regression analysis, there was no association between ASAP and classification of cancer risk (ASAP: β = -0.12; p=0.204).

Conclusion: Patients diagnosed with ASAP on index biopsy managed according to NCCN recommendations are more likely diagnosed with benign pathology and clinically insignificant prostate cancer upon repeat biopsy. These findings support further external validation of the results in a large cohort of patients in order to discern the appropriateness and timeliness of repeat biopsy among patients diagnosed with ASAP.

MP-07.16

Economic Effectiveness of Urinary PCA3 Test in Cases of Serum PSA Level 4-10 Ng/Ml

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Introduction and Objective: PCA3 outperforms serum PSA in prostate cancer (PCa) detection. Biopsy decision in patients with serum PSA levels in the «grey zone» seems to be a difficult task. PCA3 can help in PCa diagnosis, but detection of urinary PCA3 expression is more expensive, than PSA test, and its use remains controversial.

Previously we estimated the diagnostic performance of urinary PCA3 for patients with total PSA levels of 4-10 ng/ml. The purpose of this study was to evaluate the economic expediency of the real-time RT-PCR-based urinary PCA3 detection method used for PCa diagnosis in relation to its diagnostic efficacy in patients with serum PSA level between 4 and 10 ng/ml.

Materials and Methods: An economic modeling was performed to compare 2 diagnostic strategies for prostate cancer detection in patients with serum PSA 4-10 ng/ml. The first strategy (I) was based on serum PSA, and implicated the rise of PSA level > 4 ng/ml as an indication for prostate biopsy. The second strategy (II) included an additional evaluation of PCA3 urine expression level in patients with elevated PSA > 4 ng/ml, and implicated PCA3 over expression as an indication for prostate biopsy. Model included 10000 patients with serum PSA level 4-10 ng/ml. In order to model biopsy outcomes in a simulated population, we used the data from 20984 biopsy specimens (from patients with serum PSA levels between 4 and 10 ng/ml) study [Gilbert S.M. et al., 2005]. To simulate an amount of PCA3 true and false positive/negative cases, we used the values for urinary PCA3 sensitivity (73.5 %) and specificity (90.6 %), which we observed in a real sample of 66 patients with total PSA levels in the «grey zone», and a simulated data on biopsy outcomes. To calculate costs for prostate biopsy and PSA testing, we used prices of medical services contained in Russian mandatory health Insurance system tariffs. Costs were calculated in Russian currency. We also used the prime cost for PCA3 urine test, which was calculated in our previous study.

Results: Strategy I demonstrated 6992 false-positive results. Strategy II showed 657 false-positive and 2211 true positive results. Urinary PCA3 test avoided 90.6% unnecessary biopsies, but 26.5% PCa cases were missed. PSA-based strategy in patients with a PSA within the «grey zone» was 1.5 fold expensive, than PCA3-based strategy.

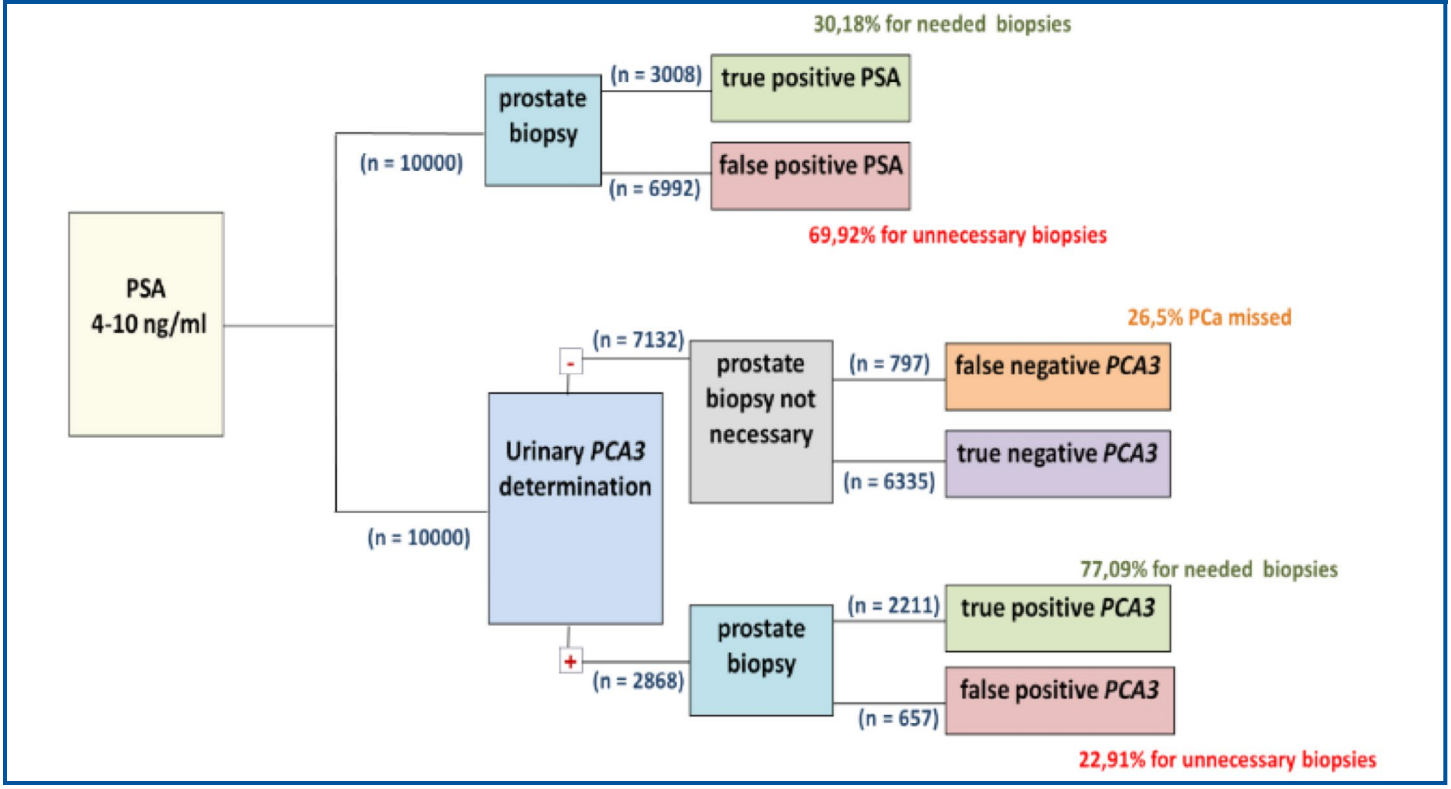
Conclusion: Use of real-time RT-PCR-based urinary PCA3 detection method to GUIDE prostate biopsy decision in patients with PSA levels within 4-10 ng/ml can avoid unnecessary biopsies and save costs. However, a serious number of PCa cases were missed in our model, and further investigations are needed to resolve this controversial point.

MP-07.17

MRI As a Triage Test in Prostate Cancer Diagnostic Algorithm in Biopsy-Naïve Men: A Prospective Study

Stejskal J[1], Záleský M[1], Ryznarová Z[2], Minárik I[3], Koldová M[4], Votrubová J[2], Babjuk M[4], Zachoval R[5]

MP-07.16, Figure 1. Decision Tree Model for Two PCa Diagnostic Strategies



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Introduction and Objectives: The aim of this study is to show potential benefits of multiparametric MRI as a triage test in the diagnostic of prostate cancer.

Materials and Methods: An mpMRI/TRUS fusion guided biopsy followed by systematic biopsy (12 cores) was performed in 132 biopsy naïve patients (age≤75 years, normal DRE). The mpMRI was performed on a 1.5T machine using surface and endorectal coil. The mean age of patients was 62 years. The mean PSA was 7.15 ng/ml. Overall detection rates and detection rates of clinically significant prostate cancer (CSPCA) were stratified according to PIRADS version 1 into 5 groups: MRI negative (PIRADS <3), PIRADS 3, 4, 5 and NA (MRI positive, no specific PIRADS). CSPC was defined as: Gleason score> 6 or 3 and more positive biopsy cores or > 50% of cancer in a biopsy core. The number of avoidable biopsies and of missed prostate cancers was counted for significant and insignificant prostate cancer.

Results: A summary of detection rates is in the table below: If the cut-off level was PIRADS <3, 21.9% of biopsies could be avoided, 6.3% of clinically insignificant prostate cancer would not be diagnosed, but 2.0% of clinically significant prostate cancer would be missed. If cut-off level was PIRADS ≤3, 42.4% of biopsies could be avoided, 56.3% of clinically insignificant prostate cancer would not be diagnosed but 8.1% of clinically significant prostate cancer would be missed.

Conclusion: If MRI served as a triage test in diagnostic algorithm of prostate cancer, a significant number of biopsies could be avoided and a considerable amount of clinically insignificant prostate cancer would not be diagnosed. On the other hand, a small but not negligible number of clinically significant prostate cancers would be missed. Supported by the Agency for Healthcare Research MZČR, project number 15-27047A.

MP-07.17, Table 1.

PIRADS	<3	3	4	5	NA	Σ
Number of patients	29	27	55	15	6	132
Overall prostate cancer	2 (6.9%)	11 (40.7%)	36 (65.5%)	14 (93.3%)	2 (33%)	65 (49.2%)
Clinically significant PC	1 (3.4%)	3 (11.1%)	30 (54.5%)	13 (86.7%)	2 (33%)	49 (37.1%)
Insignificant PC	1 (3.4%)	8 (29.6%)	6 (10.9%)	1 (6.7%)	0 (0.0%)	16 (12.1%)

MP-07.18

Opium Consumption Is Negatively Associated with Serum Prostate-Specific Antigen (PSA), Free PSA, and Percentage of Free PSA Levels

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Introduction and Objectives: Addiction to opium continues to be a major worldwide medical and social problem. The study addressing the association between opium consumption and serum prostate-specific antigen (PSA) level is lacking. We determined the effects of opium consumption on serum PSA levels in opium-addict men.

Materials and Methods: Our study subjects comprised 438 opium addict men with a mean age of 52.2 ± 6.4 years (group 1). We compared these men with 446 men who did not indicate current or past opium use (group 2). Serum total PSA (tPSA), free PSA (fPSA), %fPSA, and sex hormones were compared between the 2 groups.

Results: The mean serum tPSA level was significantly lower in group 1 (1.05 ng/mL) than in controls (1.45 ng/mL) ($P = 0.001$). Opium consumption was also associated with lower fPSA ($P = 0.001$) and %fPSA ($P = 0.001$). Serum free testosterone level in opium-addict patients (132.5 ± 42 pg/mL) was significantly lower than that in controls (156.2 ± 43 pg/mL) ($P = 0.03$). However, no significant correlation existed between tPSA and free testosterone levels (r = 0.28, 95% CI, -0.036 to 0.51, $P = 0.34$). Among the patients with cancer in group 1, 35% were found to have high-grade tumor (Gleason score ≥7) compared with 26.7% in group 2 ($P = 0.02$). Total PSA and fPSA were strongly correlated with duration of opium use (r = -0.06, 95% CI, -0.04 to -0.08, $P = 0.0001$; and r = -0.05, 95% CI, -0.03 to -0.07, $P = 0.0001$, respectively).

Conclusions: Opium consumption is independently and negatively associated with serum tPSA, fPSA, and %fPSA levels.

MP-07.19

Different Incidence of Prostate Cancer According to Metabolic Health Status: A Nationwide Cohort Study

Kim JW, Jeong HG, Ahn ST, Oh MM, Moon DG, Cheon J, **Park HS**

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Introduction and Objective: We assessed the association between metabolic health status and incidence of prostate cancer with the analysis using nationally representative data of the Korean population from the National Health Insurance System (NHIS) and national health screening examination (NHSE) database.

Materials and Methods: Of the 13 576 768 participants who underwent health examinations in 2009–2012, 139 519 men ≥40 years old and without prostate cancer were followed from the beginning of 2009 to the end of 2012. People with metabolically obese, normal-weight (MONW) individuals were defined as subjects with BMI <25 kg/m2 and developed ≥3 components of metabolic syndrome. Multivariate adjusted Cox regression analysis was conducted to examine the hazard ratio (HR) and 95% confidence interval (CI) for the association between metabolic health status and incidence of prostate cancer.

Results: Of the study participants, 7 121 208, 1 398 474, 2 673 155, and 2 383 931 subjects were classified into MHNW (metabolically healthy, normal-weight), MONW, MHO (metabolically healthy obese), and MOO group. Mean BMI was 22.1 in the NHNW group and 27.8 in MOO group. The hazard ratio for prostate cancer according to metabolic health status was stratified by BMI in both age- and multivariable-adjusted models. The incidence of prostate cancer showed significant correlation for the number of components of metabolic syndrome. In addition, in the population with BMI of > 23 kg/m2, HR was significant higher in MO group then MH group.

Conclusion: This population-based study shows the evidence of association between metabolic health status and the incidence of prostate cancer, and the risk increases vary according to the number of components of metabolic syndrome.

MP-07.20

Risk Stratification for Disease Progression in Pt3 Prostate Cancer after Robot-Assisted Radical Prostatectomy

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Introduction and Objective: The role of adjuvant radiation therapy (ART) for patients with adverse pathologic features after radical prostatectomy (RP) has been demonstrated, but over- or undertreatment remains a significant concern. We aimed to identify optimal patients for ART in pT3 prostate cancer (PCa).

Materials and Methods: Two hundred five patients with pT3N0M0 who underwent robot-assisted RP without ART were analyzed. Multivariate Cox proportional regression analyses were used to identify predictors of biochemical recurrence (BCR) and clinical progression (CP).

Results: During a median follow-up of 32 months (interquartile ranges, 18.5-53.0), BCR occurred in 64 patients (31.2%) and CP was identified in 13 patients (6.3%). The actuarial BCR-free survival (BCRFS) and CP-free survival (CPFS) at 5 years were 52.8% (95% confidence interval [CI], 42.6-65.5) and 85.6% (95% CI, 77.7-94.4). Preoperative PSA ≥10 ng/ml (hazard ratio [HR], 3.29-6.03; p = 0.003), pathologic Gleason score (pGS) ≥8 (HR, 4.14; p = 0.014), and lympho-

vascular invasion (LVI) (HR, 2.17; p = 0.026) were associated with BCR. Based on these factors, a risk stratification tool was developed from Risk Group 1 to 4. Patients with no risk factors (Risk Group 1; PSA < 10ng/ml, pGS 6, and absent LVI) showed excellent BCRFS and CPFS at 5 years (91.9% and 100.0%), but those with two or more risk factors (Risk Group 4; PSA ≥10 ng/ml, pGS ≥8, or present LVI) had poor BCRFS and CPFS (12.1% and 54.6%). Our results suggest that immediate ART may not be a necessary intervention for Risk Group 1. In addition, it may be insufficient for Risk Group 4 when considering ART as an adjuvant monotherapy following RP. Pathologic stage pT3b (vs. pT3a; HR, 5.39; 95% CI, 1.23-23.62; p = 0.025) was the only predictor of CP. The predicted 5-year CPFS in pT3a and pT3b were 90.9% and 58.3%, respectively (Log-rank test, p = 0.001).

Conclusion: Our results demonstrated the heterogeneity of oncologic outcomes in patients with pT3 PCa. The proposed risk stratification can be used to identify patients who are at risk for disease progression and may aid in identifying the best patients for ART.

MP-07.21

Artificial Intelligence (AI) Can More Efficiently Predict Prostate Cancer Compared with PSADT and PSAD

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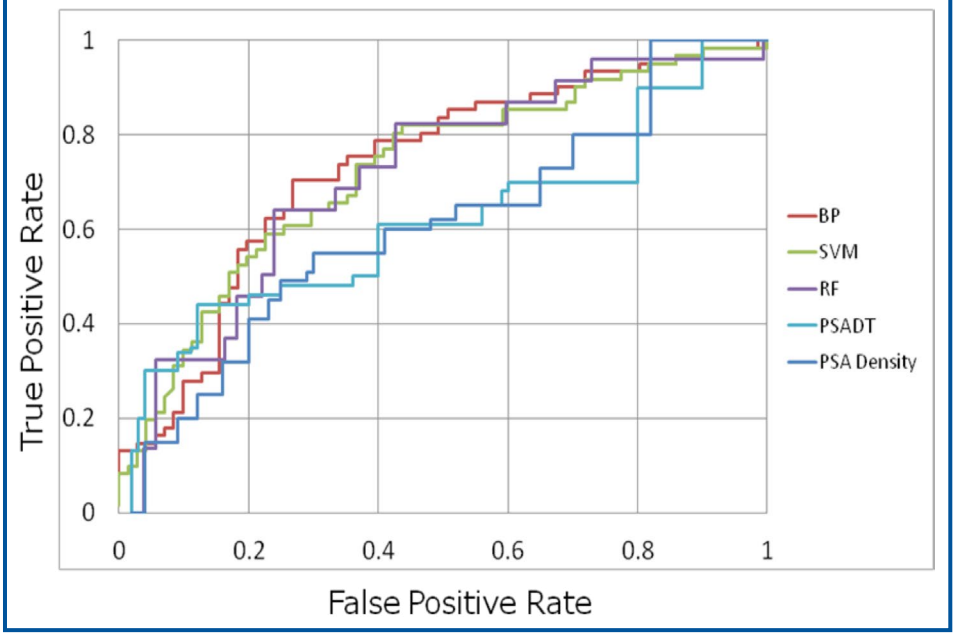
Introduction and Objective: We investigated the possibility of predicting prostate cancer from changes in the PSA level using 3 types of artificial intelligences (AI): Neural network back propagation (BP), Support vector machine (SVM), and Random forest (RF).

Materials and Methods: Between October 2002 and June 2016, 3,911 patients underwent prostate biopsy at our hospital, and data on continuous changes in the PSA level over the past 2 years were accumulated in 657 of them. The age, PSA level (maximum, minimum, middle levels, mean, and variance), prostate volume and presence or absence of pyuria of 657 patients were entered as input data in each AI, and the accurate prostate cancer diagnosis rate, ROC curve, and AUC were retrospectively calculated. These data were compared with PSA doubling time (PSADT) and PSA density (PSAD). The age of the patients was 51-85 years old (mean: 68 years old), and the PSA level was 0.3-76 ng/mL (mean: 8.6 ng/mL).

Results: The accurate diagnosis rates calculated using BP, SVM and RF were 69%, 69% and 70% respectively. AUCs calculated using BP, SVM, RF, PSADT and PSAD were 0.72, 0.71, 0.73, 0.62 and 0.64 respectively (Figure).

Conclusion: AI could more efficiently predict prostate cancer based on changes in the PSA level compared with PSADT and PSAD. AI may be a useful tool to decide on the necessity of prostate biopsy, especially for a second time prostate biopsy, because no clear guidelines are indicated.

MP-07.21, Figure 1.



MP-07.22

Prostate Cancer in Australia – An Update of Patterns of Care and Outcomes

Wang L[1], Begashaw K[1], Evans S[2], Evans M[2], Millar J[3], Murphy D[4], Moon D[5]

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Introduction and Objective: To describe patterns of care for men diagnosed with prostate cancer in Victoria, Australia, between 2008 and 2016.

Materials and Methods: From August 2008 to November 2016, 17,087 men diagnosed with prostate cancer at 34 public and private hospitals in Victoria, Australia were included. These data were obtained from the Victorian Prostate Cancer Registry. Hospital characteristics, demographics, Gleason score, PSA level, risk of disease, clinical stage, details of treatment provided within 12 months of diagnosis and mortality were analysed. Patients diagnosed after January 2016 were excluded from the treatment analysis, as treatment details were not collected until after 12 months post diagnosis.

Results: Mean age of diagnosis was 66 years. Over 44.5% of patients were diagnosed with Gleason 7 prostate cancer. Median PSA level at diagnosis was 6.87 ng/mL. Over 55% of patients were diagnosed at a private hospital and 62% of patients diagnosed at a metropolitan institution. Most patients (14,304/17,087 [96.4%]) were diagnosed with clinically localised disease. Of these, 16.7% had low risk disease, 38.1% intermediate risk and 19% high risk of disease progression. Within 12 months of diagnosis, 49.4% of patients with low risk disease received no active treatment. For all risk categories, 7449 (37.8%) patients received surgical treatment and 4042 (54.3%) of those patients underwent robotic-assisted radical prostatectomy. Twenty-one percent of the patients received radiotherapy. There were 1083 deaths in this cohort. Mortality was more likely in patients with high risk or metastatic disease (p <0.0001).

Conclusion: In comparison to the patterns of care between 2008 and 2011, there was significant increase in the number of patients undergoing robotic-assisted radical prostatectomy and radiotherapy for the treatment of their prostate cancer. More patients with low risk disease were receiving active surveillance. No significant change was observed when accounting for age, PSA and clinical stage.

MP-07.23

Management of Prostate Cancer in Men more than 80 Years of Age: Under or Over Treatment?

Pindoria N, Thakare N, Ameen T, Godbole H

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Introduction and Objective: As increasing number of elderly men are diagnosed with prostate cancer, management decisions need careful consideration. Longer life expectancy and improved health status means that many elderly men are now fit for standard treatment. We aim to assess our current practice with respect to treatment options in a group of men diagnosed with prostate cancer at age 80 and above.

Materials and Methods: Hospital records between April 2014 and April 2016 were retrospectively analysed to identify all patients diagnosed with prostate cancer at 80 years of age or above. Case notes were reviewed to obtain demographic data including age, ethnicity, presenting PSA, Gleason score and TNM

staging to risk stratify patients into low, intermediate and high risk prostate cancer. Initial treatment was then collated and compared to their risk stratification group.

Results: Sixty three patients were diagnosed with prostate cancer above the age of 80 (median age: 85.3). Of these, one did not attend the follow up clinic and one died. Out of the remaining 61 patients, 13%, 10% and 77% patients were stratified into low, intermediate and high risk prostate cancer respectively. Of these 18% patients received standard treatment. Treatment options within this group included brachytherapy and active surveillance.

Conclusion: The majority of patients underwent watchful waiting or received treatment with hormones and radiotherapy in the event of disease progression. However, a small proportion underwent active surveillance or active treatment, which may represent longer life expectancy or improved performance status but can also contribute to increase morbidity and healthcare costs.

Moderated ePosters Session 8 Reconstruction and Trauma: Urethroplasty

Saturday, October 21
1415–1545

MP-08.01

Use of a New Urethral Catheterisation Device (UCD) to Reduce the Risks of Urethral Trauma Due to Urethral Catheterisation

Bugeja S, Frost S, Ivaz S, Dragova M, Hirst J, Mundy AR

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Introduction and Objective: Urethrotech™ has developed a 'ready-to-use' medical device (integrated hydrophilic nitinol guide wire into 16F Silicone 3-way Foley catheter) for difficult urethral catheterisation particularly in clinical environments where no specialist equipment or expertise is available, avoiding more dangerous alternatives such as suprapubic catheter (SPC) insertion. This study evaluates the efficacy and safety of this new UCD™ in men undergoing cardiac-surgery.

Materials and Methods: One hundred and fifty consecutive men undergoing urethral catheterisation prior to cardiac-surgery were evaluated retrospectively and 74 prospectively to determine the incidence of urethral trauma due to urethral catheterisation and the need for SPC insertion. One hundred patients were then studied prospectively to trial the new UCD™ to see whether it reduced the incidence of difficult urethral catheterisation.

Results: Four of 150 (2.7%) patients required a SPC for traumatic/unsuccessful catheterisation with a standard urethral catheter. No other adverse events were recorded. Seven of 74 (9.5%) patients studied prospectively after counselling and consenting had an adverse event: 5 (6.8%) had urethral/perineal pain and urethral bleeding and 2 (2.7%) required SPC. None of the 100 patients undergoing urethral catheterisation using the Urethrotech UCD™ reported any complications.

Conclusions: Urethral catheterisation has a significant risk of trauma, particularly in elderly men with larger prostate. The Urethrotech UCD™ reduces the risk of trauma in difficult urethral catheterisation, particularly in high-risk patients, such as fully heparinised cardiac-surgery patients. A nurse-led service is empowered with this simple and safe device, suitable for any clinical environment, primary or secondary, with the potential of reducing unnecessary Accident and Emergency attendance and hospitalisation.

MP-08.02

Low Testosterone is Associated with Anterior Urethral Stricture

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Introduction and Objective: Testosterone is known to have key involvement in urethral development. Although there are accepted risk factors for stricture formation, the true biological processes leading to stricture formation in some, while sparing others remain unclear. We aimed to evaluate a hypothesis previously put forth by McCullough and colleagues regarding an increased prevalence of low testosterone found in men with anterior urethral strictures, which could help explain stricture formation mechanisms.

Materials and Methods: Using a prospectively maintained male urethral stricture database from February 2014 to March 2017, we identified all men treated for anterior urethral stricture. All men were offered serum total testosterone level check prior to urethral reconstruction by a single surgeon (DN). Patients with radiation-induced stricture, prior prostatectomy, prior urethroplasty or pelvic fracture urethral distraction injuries were excluded. A serum testosterone level of less than 300ng/dL was used to define low serum testosterone. An age-matched cohort from a national database (NHANES), were used as a reference.

Results: Of the 104 men with anterior urethral strictures that met inclusion criteria, 78 (75%) agreed for pre-operative testosterone levels measured. Overall, low testosterone was found in 41/78 (53 %) men with anterior urethral strictures group and 27.5% of patients in the national database. Figure 1 describes the prevalence of low testosterone in our cohort and the NHANES database stratified by age group.

Conclusions: Low serum testosterone is more common in patients with anterior urethral strictures than can be expected in the general population based on a national database. This difference is more striking with younger patients in the stricture cohort with unexpected high rates of low testosterone. Further investigation is warranted into the relationship between serum testosterone and anterior stricture formation.

MP-08.03

The Effectiveness of Tamoxifen in Prevention of Recurrent Urethral Strictures Following Internal Urethrotomy

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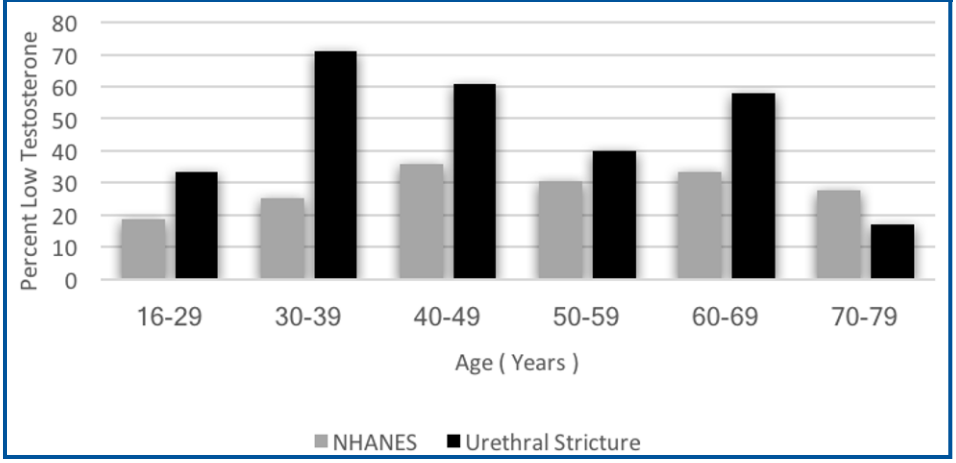
Introduction and Objectives: Despite its popularity, internal urethrotomy shows relatively high failure rates and can be challenging and frustrating for the surgeon. Tamoxifen is known to have anti-fibrinoplastic activity and has been used as off- label usage to treat other urologic disorders associated with fibrosis as Peyronies disease and retroperitoneal fibrosis. Tamoxifen was not used before to decreses urethral re-stricture rate after internal urethrotomy. Here in this study we firstly report use of Tamoxifen to decreses the re- fibrosis and stricture recurrence after internal urethrotomy.

Materials and Methods: Between January 2015 to August 2017, 60 male patients between 18 to 67 years old (mean 43) underwent internal urethrotomy for post traumatic bulbar urethral stricture ≤1 cm. Cases were evaluated using uroflowmetry, ascending urethrogram and perineal ultrasonography preoperatively and at 3 and 6 months. They were divided into 2 equal groups (30 patients each). Tamoxifen group cases received tamoxifen 10 mg twice daily for 6 months after optical urethrotomy. The control group did not receive any medications after optical urethrotomy.

Results: Stricture length was 10.3±6.5 and 9.75±4.12 mm for control and Tamoxifen group respectively. (P=0.495). Perineal ultrasonography revealed statistically significant differences in length and depth of spongiofibrosis between tamoxifen and control groups in 3 and 6 months intervals. During postoperative follow up, urethral stricture recurrence evident by ascending urethrography occurred after 3 months in 14 cases: 10 cases (33.3%) of control group and 4 cases (13.3%) in Tamoxifen group. The difference was statistically significant ($P = 0.001$). The re-stricture rate increased after 6 months to 19 patients: 13 patients (21.6%) in the control group and 6 patients (20%) in the Tamoxifen group. The difference was statistically significant ($P = 0.001$). There were no significant side effects associated with Tamoxifen therapy in this study.

Conclusion: The use of Tamoxifen after internal urethrotomy seems to decrease the re-fibrosis and the stricture recurrence rate. Further larger well designed studies are needed to draw firm conclusions.

MP-08.02, Figure 1.



MP-08.04

Is There Still a Role for Urethral Dilatation in the Modern Management of Bulbar Urethral Strictures?

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Introduction and Objective: Urethroplasty is undoubtedly the goldstandard curative treatment of bulbar urethral strictures. Nevertheless, endoscopic management is still widely practiced for new and recurrent strictures despite low rates of success in the longer term. We have looked at our practice to indentify those select patients who might benefit from endoscopic stricture management and the outcome of this treatment strategy.

Materials and Methods: All cases of bulbar strictures managed endoscopically over a 12 month period in 2013 in a tertiary referral reconstructive urology unit were evaluated. Those with a minimum follow-up of 2 years were included.

Results: Eighty endoscopic interventions for bulbar strictures (of varying etiology) were performed throughout this period during which 57 bulbar urethroplasties were also carried out. All were urethral dilatations using serial dilators over a nitinol-core floppy tipped guidewire. In 19 patients (24%) this was a primary treatment while the rest had undergone between 1 and 15 previous endoscopic interventions. Thirty five of them (44.9%) had undergone at least one intervention in the preceding 12 month. Dilatation was performed most commonly as a temporising measure to control symptoms while waiting for their urethroplasty, in 21 patients (26.3%). Other indications were: patient choice (n=17; 21.3%), patient unfit for urethroplasty (n=14; 17.5%), as part of an interval dilatation regime (n=15; 18.8%), as an emergency with patient in urinary retention (n=4; 5%) and for a recurrent stricture post-urethroplasty (n=5; 6.3%). Four cases (5%) were deemed unreconstructable.Two patients experienced complications (2.5%). Only 6 patients (7.5%) having their first dilatation required no further intervention. Of the whole cohort, 16 patients (20%) required no further intervention, 21 (26%) went on to have an urethroplasty, 25 (31%) required further dilatations and 18 (23%) started/continued self-dilatation.

Conclusion: Even in a high-volume urethroplasty centre, urethral dilatation is still performed fairly regularly albeit in a select patient population, well in the knowledge that more often than not this will need to be repeated at varying intervals in future.

MP-08.05

The Positive Impact of Subspecialist Training in Urethral Reconstruction

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Introduction and Objective: The aim of this study is to determine the impact of subspecialist training in urethral reconstruction at a high volume centre of excellence.

MP-08.05, Table 1. Success Rate of Open Urethral Reconstructive Surgery

Year	Anastomotic Urethroplasty	Substitution Urethroplasty	Total AU + Substitution Urethtoplasty
2010	41.7% (5/12)	100% (4/4)	56.2% (9/16)
2011	42.9% (6/13)	81.8% (9/11)	62.5% (15/24)
2012	53.3% (15/28)	82.3% (14/17)	64.4% (29/45)
Subspecialist training occurred in Jan 2013			
2013	90.3% (28/31)	84.2% (16/19)	88.0% (44/50)
2014	87.2% (34/39)	77.8% (14/18)	84.2% (48/57)
2015-Jan 2016	90.2% (46/51)	87.5% (21/24)	89.3% (67/75)

Materials and Methods: This is a single-institution, single-surgeon prospective case series. A prospective database of all patients with male urethral strictures requiring open surgical urethral reconstruction at Hasan Sadikin Hospital, Indonesia between January 2010 and January 2016 has been analysed. Hypospadias related strictures were excluded as these are a complex, heterogenous group but all other patients were included in an intention to treat manner. Patient characteristics, stricture related information and outcomes were recorded and analysed. The primary outcome was success rates before and after subspecialist training in urethral reconstruction. Success was defined as uroflowmetry more than 15mls/s and no surgical intervention. Subspecialist training in urethral reconstruction at a high volume centre of excellence was undertaken in January 2013, constituting a significant intervention with changes in pre, peri and post-operative patient management.

Result: Data from all 267 patients treated with open urethral reconstruction during this period were included in this study with 85 patients in period before training (Group I) and 182 in period after training (Group II). Both groups were uniform with respect to age, co-morbidities and aetiology of urethral stricture. There was significant difference in success between the groups I and II (62.3% % (53/85) Vs 85.2% (155/182)).

Conclusions: Subspecialist training in urethral reconstruction at a high volume centre of excellence has a significant positive impact on outcomes.

MP-08.06

The Longer-Term Results of Non-Transecting Bulbar Urethroplasty

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Introduction and Objective: The non-transecting approach to bulbar urethroplasty was popularised by Jordan et al in 2007 and Andrich et al in 2012 and is being used by an increasing number of surgeons. We reviewed our experience with this procedure.

Materials and Methods: Between May 2009 and November 2015, 125 men with a mean age of 42 (range 16 -77) years have undergone a "non-transecting approach" to their bulbar urethral stricture. One hundred and twelve patients had idiopathic strictures, 5 had iatrogenic strictures, 5 had urethral trauma, 5 were post-radical prostatectomy strictures and 3 were post-TURP strictures. In the same timeframe 36 transecting anastomotic urethroplasties were performed for straddle injuries and 201 dorsal patch bulbar urethroplasty were performed for long urethral strictures. Fifty eight patients had a non-transecting mucosal anastomotic repair, 48 patients had a non-transecting augmented anastomotic repair and 19 underwent stricturoplasty alone. Follow-up was 12 to 91 months (mean 29 months).

Results: All patients underwent clinical assessment, flow rate studies and urethrograms prospectively. Clinically, 116 patients were happy with the result of their surgery, 2 were unhappy (but had normal flow rates) and there were 4 failures, all of whom underwent revisional surgery. Three patients were lost to follow-up. The mean postoperative peak flow rate was 34.9mls per second, in 102 patients; 7 patients had flow rates of less than 15mls per second, including the 4 failures; 3 patients voided less than 100mls and were therefore not assessable and 13 patients refused a flow rate study or were lost to follow-up (n=3). On retrograde urethrogram, 120 were normal; 1 had a slightly reduced calibre but had a normal flow rate; there were 4 recurrent strictures; and 9 refused or were lost to follow-up (n=3). Overall 118 of 122 patients (96%) were a success by all criteria: clinically, by flow rate study and objectively.

Conclusion: The non-transecting approach to bulbar urethroplasty gives results that are at least as good as previously reported for excision and primary anastomosis or augmented anastomotic urethroplasty or dorsal patch urethroplasty. The increasingly widespread use of this procedure is therefore entirely justified.

MP-08.07

Augmented Urethroplasty with Palatal Mucosa Graft: A Novel Graft Tissue

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Introduction and Objective: There is need to search a new graft material in situations where buccal mucosa from both cheeks have been harvested or looked unhealthy, usually in complex or redo urethroplasty. The palatal mucosa is almost similar to lining the rest of oral cavity and has been used successfully in ophthalmic surgeries with insignificant complications. The

aim of this study was to provide a proof of concept for the feasibility and safety of use of palatal mucosal graft (PMG) for augmentation urethroplasty and short term result of graft uptake.

Materials and Methods: Three men with age range of 42 to 55 years and recurrent urethral strictures 2-4 cm long were included in this study. All patients had a history previous bilateral buccal mucosa harvest with unhealthy donor site. We harvested the palatal mucosa on one side of the midline. Palatal grafts were used to augment the strictured urethra in either dorsal inlay (2 cases) or ventral (1 case) onlay. Postoperatively, all patients were followed with uroflowmetry and cystourethroscopy after 3 months for uptake and healing of the graft and healing of the palatal graft bed.

Results: Mean operative time for PMG harvesting was 33 minutes (range 25 to 40) and average surgical bleeding was minimal. Mean Length of graft is 5.cm, width was 1.5 cm.No major intraoperative or post-operative complication were noted like bleeding, oropharyngeal fistula. Defattening of the PMG was easy and could hold the sutures during quilting and urethral anastomosis. Follow up ranged from 3 to 6 months. Retrograde urethrography at 3 months showed patent urethra with good caliber. Cystourethroscopy revealed no graft contractures with pink mucosa. There was mild to moderate pain till 15 days required NASIDs but no aesthetic or functional complications at the donor site were reported after 6 months.

Conclusions: Harvesting PMG is feasible and easy to perform with minimal complications. Compared with the buccal mucosal graft, initial, functional and aesthetic results are satisfactory. PMG is feasible appealing graft option in those cases with history of bilateral buccal mucosa harvest or unhealthy oral muocsa.

MP-08.08

Single Stage Repair of Obliterated Anterior Urethral Stricture by Combined Buccal Mucosa Graft and Penile Skin Flap

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Introduction and Objective: Repair of most severe anterior urethral strictures often requires complete substitution of the obliterated urethral segment. We evaluated a method of combining buccal mucosa graft and penile skin flap to create a complete urethral lumen in the treatment of complex anterior urethral strictures.

Materials and Methods: Between April 2008 and April 2016, 46 patients aged from 15 to 63 years underwent one-stage substitution urethroplasty due to a severe anterior urhral stricture. The etiology of strictures was: unknown, hypospadias and trauma in 17, 24 and 5 patients, respectively. The affected urethral segment was completely removed; buccal mucosa graft was harvested and fixed to corpora cavernosa as dorsal part of the neourethra and vascularized longitudinal dorsal penile skin flap was created, transposed ventrally and sutured to buccal mucosa graft to form complete urethral lumen.

Results: Mean follow-up was 39 months (ranged from 12 to 108 months). Mean length of the obliterated urethral segment was 5.2 cm (ranged 2 to 9.5 cm). Successful result was confirmed in 34 (73.9%) patients. Twelve patients (26.1%) developed following complications: recurrence of the stricture occurred in seven (15.2%) patients and five (10.8%) patients developed fistula. Superficial necrosis of the dorsal penile skin was occurred in five cases and all healed by conservative treatment.

Conclusions: The combination of buccal mucosa graft and longitudinal dorsal penile skin flap proved to be a successful choice for substitution urethroplasty in most severe obliterated anterior urethral strictures. This way, multi-stage repair of these complex strictures could be avoided.

MP-08.09

Vicryl Tack for Graft Fixation during Bulbar Urethroplasty: A Feasibility Study of Efficacy and Safety

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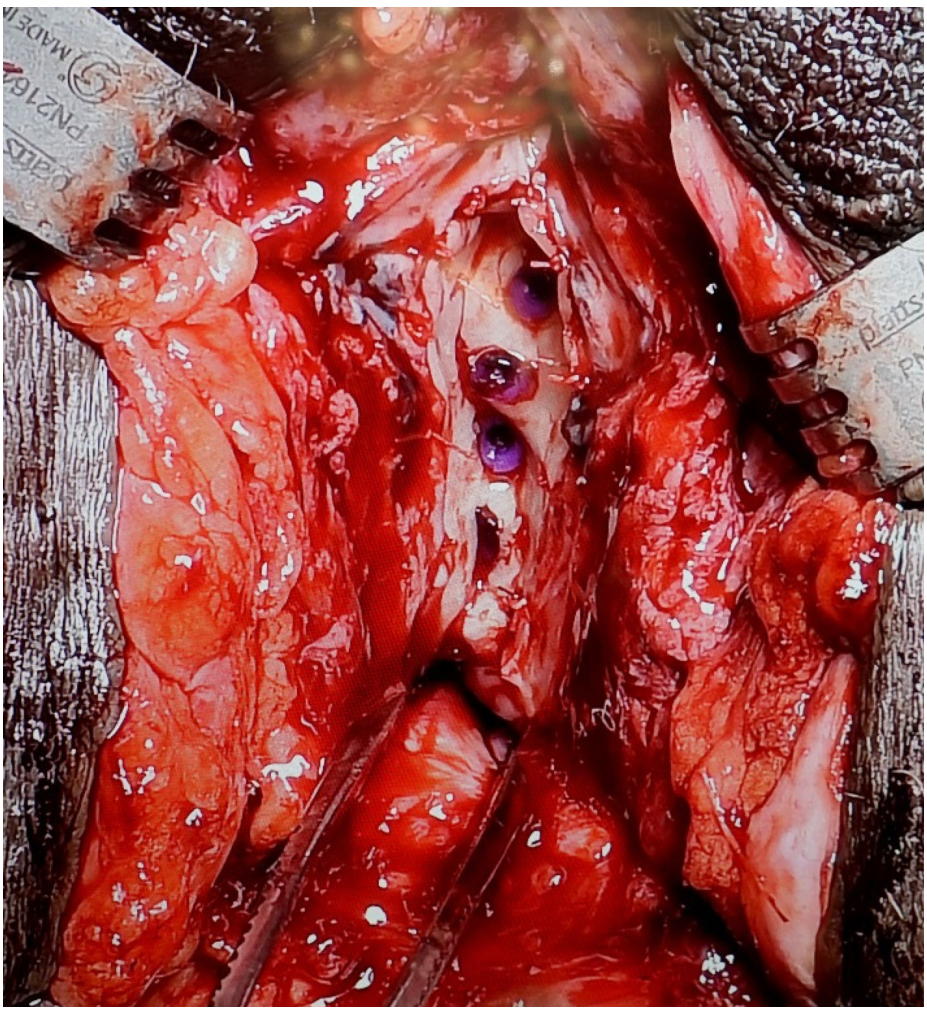
Introduction and Objective: Urethral stricture disease remains to be a prevalent condition. Oral mucosal graft augmentation urethroplasty for bulbar urethral strictures is an established management option. This pilot study was designed to evaluate the efficacy and safety of using innovative steps for graft augmentation.

MP-08.09, Figure 1. AbsorbaTack™ (ABSTACK30X) 5 mm Absorbable Fixation Device

MP-08.09, Figure 2. Dorsal Approach Bulbar Urethroplasty – Graft Fixed Using AbsorbaTack™



Materials and Methods: Our ethics approved prospective study included patients with bulbar stricture from November2015 to January2016 and a follow up of 12 months. We excluded patients with concurrent penile strictures and those refusing consent. After evaluation, all patients underwent dorsal approach buccal mucosal graft urethroplasty. The graft was fixed using AbsorbaTack™ (ABSTACK30X) 5 mm absorbable fixation device in the midline. Catheter was removed at one month. Follow up included uroflow study every 3 months for 12 months. Data was analyzed for age, cause of stricture, previous treatment, site and length of stricture, operative time, preoperative and postoperative max flow rates, AUA and IIEF scores. Paired t test was used to evaluate difference in the flow rates, AUA and IIEF scores ($p<0.05$ was deemed significant).

Results: Our study population included 7 patients. The commonest cause of urethral stricture was lichen sclerosis (LS). The mean age was 32.85 years (24-42 years). The mean stricture length was 2.84 cms (2-4cms). All except one patient had previous endoscopic management. The average operative time was 1.14minutes (47-76 minutes). Mean AUA scores were 21.14(18-23) preoperative and 2.86 (2-4) postoperative ($p<0.0001$ 95% CI 16.71 to 19.86). Mean IIEF scores were 23.14 (22-25) preoperatively and 22.86 (22-24) postoperatively ($p=0.5222$ 95% CI -0.74 to 1.31). Preoperative flow rate was 9.28 mls/sec (3-8 mls/sec) and postoperative flow rate of 20.57mls/sec (16-24mls/sec) at 12 months ($p<0.0001$ 95% CI -18.28 to -12.01). There were no complications.

Conclusion: Our pilot study shows that Vicryl Tack TM can be safely used to quilt the graft with good outcomes. Larger randomized studies are required to assess the long-term outcomes.

MP-08.10

Single Stage Repair of Pan-Urethral Stricture with Dorsal Onlay Substitution Using Buccal Mucosal Graft and / or Skin Flap– Complications and Results

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Introduction and Objective: Pan-urethral stricture (PAN-US) – a challenging entity- needs careful evaluation and appropriate selection of treatment option. We evaluate complications and results of treatment of PAN-US with transperineal dorsal onlay substitution using buccal mucosal graft and / or a skin flap.

Materials and Methods: This cohort study was an analysis of 21 men with PAN-US. Age range was 21 to 64 (mean 48). There were 5 (24%) BXO, 9 (43%) iatrogenic, 4 (19%) infective and 3 (14%) idiopathic. All the cases were done with penile invagination and dorsal onlay in entire length except at the distal penile urethra where dorsal inlay was done through the meatus. Substitution material was buccal mucosa graft or/and prepucial/penile skin flap. Preoperative assessment was done with AUA symptom score, uroflowmetry, ultrasonography and urethrogram. Follow up included all these parameters except urethrogram and was done for 6 to 55 months (mean 27).

Results: Immediate complications were penile edema in 4 (19%), urinary sepsis in 1(4%) and fistula in 1(4%). Late complication was recurrence requiring intervention in 3 (14%). Sites of recurrence were as follows: meatal 2(9%), anastomotic 3 (14%) and intermediate 1 (4%). A single patient had more than one site of recurrence. AUA symptom score, peak flow rate and post void residue improved from 30 to 5, 4 to 21 ml/s and 230 to 20 ml respectively.

Conclusion: The success of entire length substitution urethroplasty with single material or combination in complex PAN-US in short and medium term is gratifying. Complications are known but manageable. However long term outcome needs structured assessment.

MP-08.11

Stage Urethroplasty Using Full Thickness Preputial Skin Graft, to Promote a Skin Flap for the Reconstruction of the Devastated Bulbar Urethral Stricture

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Introduction and Objective: Long segment urethral strictures and multiple attempts to solve them, may derived in a devastated bulbar urethral iatrogenic damage. In these patients the corpus spongiosum is absent or with severe scar tissues. In these conditions, repair options are limited by the absence of healthy local tissues suitable for traditional reconstruction techniques. The aim of this presentation is to share our experience using a full thickness preputial skin graft (FTPSG) combined with an oral mucosa graft (OMG) for stage urethroplasty in patients with severe fibrosis of the corpus spongiosum and long complete urethral luminal obliteration.

Materials and Methods: We reviewed the clinical records of patients who underwent urethroplasty

MP-08.09, Table 1. Summary of Cases

No	Age (years)	Cause	Bulbar	Length (cms)	Previous treatment	Operative time (mins)	Max Flow rate preoperative (mls/sec)	Max Flow rate12 months (mls/sec)	P value Paired t test
1	42	LS	Mid	2.7	Dilatation x 2	47	6	18	P < 0.0001
2	27	LS	Distal	2.5	Dilatation x 2	53	7	19	
3	34	LS	Mid	3	DVIU	73	4	22	
4	36	Idiopathic	Proximal	2	Dilatation	58	8	28	
5	28	LS	Mid	2.7	Nil	64	4	17	
6	39	LS	Mid to distal	4	DVIU x 2	76	3	16	
7	24	Idiopathic	Mid	3	DVIU x 3	57	6	24	

MP-08.09, Table 2. Summary of AUA and IIEF Scores

No	Preoperative AUA scores	Postoperative AUA scores 12 months	P value Paired t test	Preoperative IIEF scores	Postoperative IIEF scores 12 months	P value Paired t test
1	20	4	P < 0.0001	22	23	P = 0.5222
2	22	3		22	23	
3	23	4		25	24	
4	18	2		23	22	
5	21	3		23	23	
6	22	2		22	22	
7	22	3		25	23	

between 2012 and 2016. Thirteen patients were identified. All patients had severe urethral strictures that were solved with an OMG to rebuild the dorsal plate, and a FTPSG that was placed lateral to the oral graft in a first stage. In the next surgical step, a flap with the FTPSG was tailored and rotated above the OMG to reconstruct the urethral lumen.

Results: The stricture etiology was iatrogenic in 7 cases (53.8%), Idiopatic in 3 (23%) cases and traumatic in 3 cases (23%). Multiple previous urethral manipulations were indentified in 12 patients: dilatations (9), endoscopic treatments (6) and previous urethroplasty (5). One patient developed a perineal abscess after the urethral instrumentation. The mean stricture length was 7.9 cm (5 -15 cm). The patients remained with a 14Fr urethral catheter and cystostomy for 21 days after the second surgery. Four patients presented postoperatory complication, one of them was graded IIIa (Clavien-Dindo). Urethral reconstruction was completed and successful in 10 cases (91%) with a mean of 15.9 months (7-60) of follow-up. Two patients remained with a perineal urethrostomy and refused to perform the second stage surgery. In one patient the stricture recurred and a primary anastomosis was performed (24 months of followup).

Conclusion: Stage urethroplasty using a FTPSG allows to create a very good quality skin flap, that can be rotated to complete the second stage urethroplasty.

MP-08.12

Simultaneous Single Stage Anterior and Posterior Urethroplasty in Patients with Concomitant Urethral Strictures

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Introduction and Objective: Rarely concomitant anterior urethral stricture occurs in patients with Pelvic Fracture Urethral Defect (PFUD) and its management undeniably complex. We present our experience of 6 patients.

Materials and Methods: From Jan1995 to Oct 2016, 1032 posterior urethroplasties for PFUD and 2258 anterior urethroplasties for urethral stricture were performed. Of these, 6 patients had PFUD associated with anterior urethral stricture. The etiology of the anterior urethral stricture was iatrogenic in 5 and bullet injury in 1 patient. A midline perineal incision is made. The bulbar urethra is mobilized circumferentially and transected proximally. The posterior urethra is opened after excision of fibrosis. Anastomotic sutures are placed. According to Kulkarni Pan Urethroplasty approach the penis is inverted into perineum. The anterior urethra is mobilized on one side and opened dorsally. Mean length of anterior stricture was 4.5 cm (range 3-15 cm). One or two Buccal Mucosa Grafts are applied opposite the urethra and augmentation urethroplasty is performed. Catheter is inserted and posterior urethroplasty sutures are tied. The catheter is removed after 4 weeks.

Results: See table.

Conclusions: Our experience shows that single-stage simultaneous anterior and posterior urethroplasty gives excellent results.

MP-08.12, Table 1. Results

1	PFUD	Panurethral	72 months Qmax 18	Anastomosis step 1 Panurethral BMG
3	PFUD	Bulbar stricture	58months Qmax 16	Anastomosis step 1 Dorsal onlay BMG
4	PFUD	Panurethral	35 months Qmax 31	Anastomosis step 3 Panurethral BMG
5	PFUD	Stricture and Fistula at Peno-scrotal Junction	12 months Q max 11 1 small fistula	Anastomosis step 2 Ventral fistula closure Dorsal BMG
2	PFUD	Peno-scrotal Junction	62 months Q max 28	Anastomosis step 3 Dorsal onlay BMG
6.	PFUD	Complete block at penoscrotal junction due to Bullet injury	4 months Qmax 11 Distal anastomotic ring required 1 DVIU	Vessel sparing bulbo- membranous anastomosis step 2 and Anastomosis at peno-scrotal junction

MP-08.13

'Two-In-One' Stage versus Classical Staged Approach for Penile Urethral Strictures

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Introduction and Objective: Distal penile hypospadias or Lichen Sclerosis (BXO) strictures are traditionally managed by a staged surgical approach. The aim of this study is to evaluate the suitability of a single stage oral graft substitution for these cases. This technique involves a dorsal inlay graft to augment the narrow calibre and tubularisation at the same time, a 'two-in-one' stage approach.

Materials and Methods: Data were prospectively collected from patients undergoing single stage or staged penile urethroplasty using oral mucosal graft in a single centre between 2007 and 2013. Minimum follow-up was 6 months. Outcome was assessed clinically, radiologically and by flow rate analysis. Failure was defined as recurrent stricture on urethrogram or the need for any subsequent surgical intervention. Statistical analysis was performed using Stata 13.1 for Mac. Stricture characteristics are summarised in Table 1.

Results: One hundred and twenty-four penile urethroplasties using buccal mucosa graft with complete tubularisation were performed; 71 as staged procedures, 53 in one stage, 40 of which using the 'two-in-one' stage approach and included in the analysis. Single-stage substitution penile urethroplasty is associated with excellent functional outcome equivalent to staged repair (90% vs 88.7%) even in hypospadias (many of which were salvage procedures). Distal Lichen Sclerosis-related strictures were particularly suitable for one stage reconstruction.

Conclusion: A "two-in-one" urethroplasty using BMG for complete urethral substitution is a suitable option for selected penile urethral strictures, after careful intra-operative assessment of the stricture. An excellent outcome, comparable with the classical staged approach, is achievable in high volume centres. The advantages include improved patient satisfaction, associated with fewer surgical interventions and avoidance of proximal urethrostomy.

MP-08.14

Kulkarni Perineal Incision to Repair Penile Urethral Strictures Is a Versatile and Cosmetic Approach

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Introduction and Objective: Penile urethral (PU) strictures are traditionally approached by different penile shaft incisions. We assess the feasibility of a single, perineal approach for a 1-stage surgical repair of penile urethral strictures, and assess its impact on functional and cosmetic outcomes.

Materials and Methods: From February 2008 to April 2015, a total of 76 patients with penile urethral strictures who underwent a single-stage repair via a perineal, longitudinal incision with penile inversion into the perineal wound were identified. Eight patients were lost to follow-up. All hypospadiac strictures and complex strictures following multiple failed reconstructive attempts were excluded from this study. Nineteen patients underwent 1-sided lateral OMG onlay patch (Kulkarni technique), 14 underwent Asopa technique, 12 had dorsal OMG onlay patch (Barbagli technique), 2 of them in combination with ventral corporal plication for Peyronie's disease, 15 had ventral OMG onlay patch (McAninch technique), and 8 had double face OMG patching (Palminteri technique). Mean age was 40.7 years (range 28 – 78). Stricture etiology included trauma, urethral instrumentation, lichen sclerosus (LS), idiopathic, and multifactorial. All reconstructions were performed in 1-stage with the use of oral mucosa grafts and the penis was inverted and

brought into the perineal wound to provide access to the whole length of the penile urethra. Follow-up (FU) included uroflowmetry and patient-reported questionnaire, including subjective evaluation of cosmetic outcomes. Retrograde urethrography (RUG) and flexible cystourethroscopy were performed only if stricture recurrence was suspected

Results: Mean FU was 37 months (range 12 – 87). Overall functional success rate was 82.5%, with primary and repeat urethroplasties being successful in 91.3% and 76.8%, respectively. 3.3% of the primary urethroplasty failures were successfully treated with endoscopic urethrotomy and 5.4% patients required a 2nd successful reconstructive attempt. Of the repeat urethroplasties, none was successfully treated with endoscopic urethrotomy. Overall satisfaction rate with the cosmetic appearance of the penis was 92.1%. Chordee rate was < 6.7%. Transient ecchymosis occurred in 18% of the patients, regardless of surgical technique. No penile torsion, infection, fistulation or impaired erogenous sensation was documented. All potent patients pre-operatively were able to keep their erections after surgery.

Conclusion: Many PU strictures can be approached successfully through a single, perineal incision, thus avoiding a scar and other sequelae, often extensive, from a penile incision. Patient satisfaction rate is high with little impact on cosmesis and sexuality, making the Kulkarni perineal approach to PU stricture repair an excellent and versatile technique for sexually active men.

MP-08.15

Clinical and Patient Reported Outcomes of Kulkarni Urethroplasty for Long Segment or Panurethral Strictures

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Introduction and Objective: One-stage panurethral stricture repair described by Kulkarni et al. is reported to have excellent long-term surgical success rates and low complication rates. However, little is documented on patient reported outcome measures (PROMs) after this repair. We present a multi-institutional study of clinical outcomes of panurethral stricture repair as well as patient reported urinary and sexual outcomes.

Materials and Methods: Patients from four institutions who underwent single-stage repairs for panurethral strictures (> 8 cm) involving both the bulbar and penile urethra from January 2002 to October 2016 were reviewed. These repairs were undertaken using the technique described by Kulkarni et al. Clinical outcomes included maximum uroflowmetry rates (Qmax) and post-void residuals (PVR). PROMs included voiding assessments with IPSS survey, erectile function with SHIM scores, and ejaculatory function as measured by the ejaculation domain in the Male Sexual Health Questionnaire, short-form (MSHQ-EjS). Additionally, patients were asked about qualitative questions assessing overall improvement after urethroplasty.

Results: Seventy-seven consecutive patients with a minimum of 4 months of follow up were included. The mean age was 57 years (21-80). The mean stricture length was 13.8 cm (8-21). At a mean follow up of 40 months (4-162), there were 9 stricture recurrences (88.2% success). At the last follow up, Qmax improved from mean of 5 mL/sec to 18 mL/sec (p <0.001) and mean PVR changed from 124 mL to 45 mL (p<0.001). The mean baseline IPSS score was 23 (severe) (7-24) and decreased to 10 (moderate) (1-17) on last follow-up (p <0.001). The quality of life due to urinary symptom (i.e. bother) score improved from a mean of 5 (unhappy) to 2 (mostly satisfied) (p <0.001). There was no significant change in sexual function based on SHIM score (22 to 19, p=0.49). Ejaculatory function on MSHQ-EjS was found to improve after urethroplasty from 8 pre-operatively to 11 post-operatively (p=0.03). The GRA survey indicated that all patients had moderate or markedly improvement after urethroplasty. Post-void dribbling and chordee occurred in 50% and 24% of patients respectively.

Conclusions: We report clinical outcomes that echo previous reports describing durable patency in most patients. Patient reported outcome measures in our series indicate an improvement in sexual function and urinary function. However, transient chordee was evident in nearly one in four patients.

MP-08.16

Why does the Buccal Mucosal Graft Fail: Analysis of Sub-Optimal Outcomes

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Introduction and Objective: Buccal Mucosal Graft (BMG) is widely established material as the first choice in Substitution Urethroplasty. The success rates have been 87 – 88%. We analyzed data at our center and evaluated the reasons for the suboptimal results in a specific time frame.

Materials and Methods: This is a retrospective observational study. From February 2012 to August 2014 a total of 241 patients underwent BMG for non-traumatic urethral strictures of all lengths. Excluding those who were lost to follow up 221 patients were found to be evaluable. Age range with mean was 27 to 65 years (49). None of these patients were BXO or redo. Dorsal, dorsolateral, ventral onlay and Asopa techniques were used for appropriate indications. The follow up included international symptom score, uroflowmetry and if required, urethrogram or cystoscopy. Follow up period was 12 to 40 months (Mean 21). Failure was defined as need of any intervention including dilatation/calibration, catheterization, cystoscopy, urethrotomy.

Results: The recurrence was noted as either proximal anastomotic stricture or disruption of the BMG. Overall 66 patients (30%) showed recurrence needing some form of intervention. These patients were further stratified to see the possible reasons for the failure. They were smoking/tobacco use in 33 (50%), proximal location of stricture (proximal bulb or bulbomembranous) in 11 (17%) and postoperative wound infection and/or significant pyrexia in 7 (11%). Exact cause could not be identified in 15 (22%). These factors were compared with control group (patients without any of these factors). The results showed that recurrence was noted in 53% of smokers/tobacco users compared to only 4% of nonsmokers, in 57% with proximal (bulbomembranous) location compared to 2.5% with distal location and in 63% with postoperative infection/pyrexia compared to 2% patients without postoperative sepsis.

Conclusion: BMG is currently the best material available in substitution urethroplasty; however a careful attention is required to address the causes leading to failure, in order to improve outcome. In this observational study we found smoking/tobacco use, location of stricture and postoperative infection to be the possible significant factors.

MP-08.17

The Donor Site Complications of Long-Strip Lingual Mucosal Graft for the Treatment of Long-Segment Anterior Urethral Strictures in Males

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Introduction and Objective: We evaluated the donor site complications of male patients with complex urethral strictures (CUS) that underwent urethroplasty by using long-strip oral mucosal grafts.

Materials and Methods: This was a retrospective study of 81 male patients with CUS that underwent OMG urethroplasty. Inclusion criteria included the following: patients with long segment anterior urethral stricture (≥8 cm); use of long-strip LMG (≥9 cm) as urethral substitute; and minimum postoperative follow-up of 12 months. Exclusion criteria were patients with a short segment urethral stricture (<8 cm) or the use of short-strip lingual mucosa as substitute material (<9 cm).

Results: Between August 2006 and December 2014, 81 patients with CUS underwent OMGs urethroplasty. The mean urethral stricture length was 12.1 cm (range, 8-20 cm). A single long-strip LMG measuring 9-12 cm was used in 52 patients, LMG measuring >12cm in 17, and LMG combined with buccal mucosal graft (BMG) in 12. The mean follow-up period was 41 months (range, 15-86 months) postoperatively. The overall urethroplasty success rate was 82.7%. Six months following the operation, 28 patients (34.6%) reported a minimal to moderate difficulty in fine motor movement of the tongue. Among these 28, 22 patients (27.2 %) had associated numbness over the donor site, 10 patients (12.3%) had parageusia, and 11 patients (13.6%) reported slurring of speech. At 12 months, 5 patients (6.2%) reported minimal difficulty in fine motor movement of the tongue.

Conclusions: The donor side complications are primarily limited to the first postoperative year.

MP-08.18

Quality of Life Assessment in Patients Treated with Graft Urethroplasty: 10 Years Analysis

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Introduction and Objective: Urethral stricture is an obstructive fibrotic process with different degrees of spongio-fibrosis resulting in decreased urethral lumen caliber and irritative and obstructive urinary symptoms. Urethroplasty is considered the gold standard for the management of urethral stricture, with success rates between 90.8% and 98.8%, a low rate of recurrence and cost-effective advantages compared to other techniques. Some studies have indicated patient benefit from clinician-driven outcomes or quality of life questionnaires to evaluate the effectiveness of the Urethroplasty and perform postoperative follow-up. We evaluated the quality of life outcomes after graft urethroplasty.

Materials and Methods: We reviewed 98 clinical records of patients with graft Urethroplasty, in 3 different institutions of Bogota - Colombia, from November 2006 to May 2016. To evaluate urethral reconstruction from the patient's perspective using a validated patient-reported outcome measure (PROM) through phone call.

Results: Seventy patients with an average age of 54.5 years (22-84) were evaluated. Median follow up length was 48.5 months (2.8-120.5). The most frequent cause of stricture was previous instrumentation (54.3%) and the location was penile urethra (64.3%). Urethral stricture average length was 4 cm (0.5-12). The graft most used was oral mucosa with 51.4%, followed by the preputial graft in 48.6%. At moment of phone call, 75.7% are very satisfied, 11.4% are satisfied, 10% unsatisfied and 1.4% very unsatisfied. They were unsatisfied or very unsatisfied with the outcome of their operation because the urinary condition did not improve in 5.9%, the urinary condition improved but there was some other problem in 2.9% and the urinary condition did not improve and there was some other problem as well in 2.9%. 84.2% qualified their health status greater than or equal to 70/100 points.

Conclusion: The urethral reconstruction performed in reference centers with trained specialists, shows a high positive impact on the quality of life in patients, with good results in short, medium and long term monitoring.

MP-08.19

Prospective Patient-Centred Evaluation of Urethroplasty Using a Patient Reported Outcome Measures

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Introduction and Objectives: Majority of previous study assessed outcome of urethral stricture surgery based on clinician driven outcomes. Patient-reported outcome measures (PROM) indicate patient's perception of benefit from urethroplasty. The objective is to evaluate urethral reconstruction from the patient's perspective using PROM and to assess the responsiveness of erectile function following surgery. Currently only one validated PROM exists following male anterior urethroplasty evaluating voiding symptoms and HRQoL. The men who undergo urethroplasty for urethral stricture (USS) have great concern for erectile function also. Other than USS-PROM, we also assess the erectile function in the background of USS.

Materials and Methods: Design, setting and participants: 86 men who underwent urethroplasty for bulbar urethral strictures between January 2012 to January 2015 completed the PROM before (at baseline) surgery, 6 month and 1 year after surgery. Intervention: PROM for men having bulbar urethral strictures. Outcome measurements and statistical analysis: Lower urinary tract symptoms (LUTS), health status, treatment satisfaction and erectile function were measured and analysis was done by Friedman, ANOVA and Chi-square tests.

Results: Mean age of patients in this study was 49.44 years. Of 86 patients, 51 patients underwent buccal mucosal graft (BMG) urethroplasty, 21 underwent end to end urethroplasty and 14 underwent non-transecting anastamotic (NTA) urethroplasty. The LUTS score (0= least symptomatic, 24 = most symptomatic) improved from a median of 17 at baseline to 2 at 1 year after urethroplasty (p=0.001). In 58 (67.4%) men voiding symptoms did not affect their quality of life, 18 (20.9%) reported less interference, 4 (4.7%) felt no change and 6 (7%) reported worse 1 year after urethroplasty. Overall, 66 men (76.74%) remained "satisfied"/"very satisfied" with the outcome of surgery. Health status visual analogue scale scores (100 = best imaginable health, 0 = worst) improved from a mean of 80 at baseline to 90.69 (p=0.001). Health state index scores (1 = full health, 0 = dead) improved from mean of 0.78 to 0.92 (p=0.001). Erectile function score (30=no dysfunction, 0=severe dysfunction) improved from mean of 14.46 to 22.79 (p=0.001).

Conclusions: Men reported relief of symptoms and improvement in overall health status and erectile dysfunction 1 year after urethroplasty. PROM with added assessment of erectile function is suitable for wider use for the evaluation of outcome measures after urethroplasty.

MP-08.20

Sexual Function after Urethral Stricture Reconstruction: A Systematic Review

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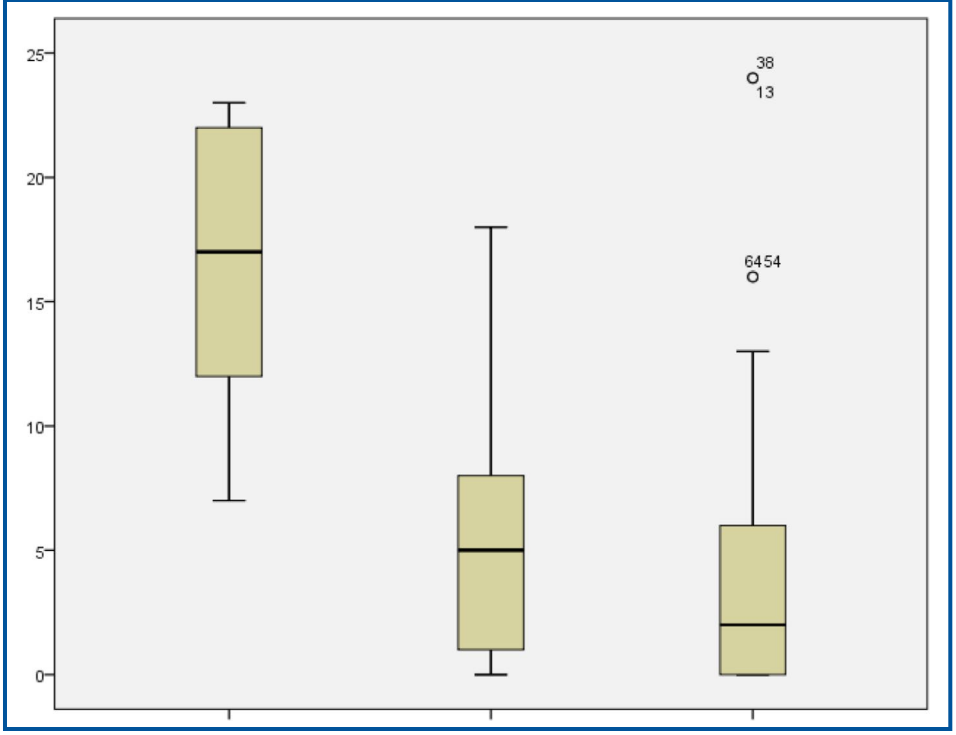
Introduction and Objective: The sexual function after urethroplasty in urethral stricture patients is a focused issue nowadays. This paper aims to extract the key information of the preoperative and postoperative sexual outcomes in the literature and evaluate the changes of sexual function.

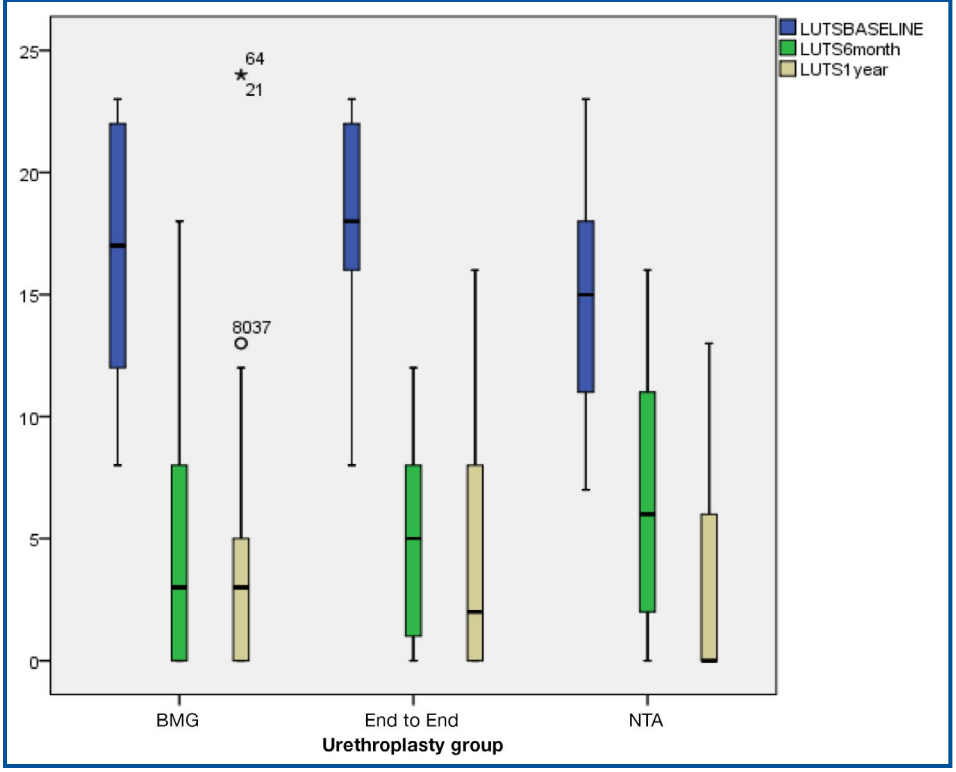
Materials and Methods: We searched EMBASE and MEDLINE, all literature retrievals were updated until February 19th, 2017. Clinical trials, case analysis and valuable case report of adult urethral stricture patients (over 16 years) were included. The surgical methods were consisted of urethral dilatation, DVIU, end-to-end anastomosis and reconstruction with various substitutes or grafts. The sexual function (erectile function, ejaculation function, sexual desire and sensation of ejaculation etc.) information was analyzed.

Results: Thirty nine studies, a total of 4559 urethral stricture patients, were included. Most studies were retrospective case series but small parts were prospective. The study qualities were not high based on the JBI's instrument. The pooled analysis suggested: (1) Urethral strictures were common in PFUDD or iatrogenic injury. (2)The urethral stricture locations and lengths were diagnosed through objective urethrography in 16 studies. (3)The incidence of ED after anterior and posterior urethral reconstructions was 4%

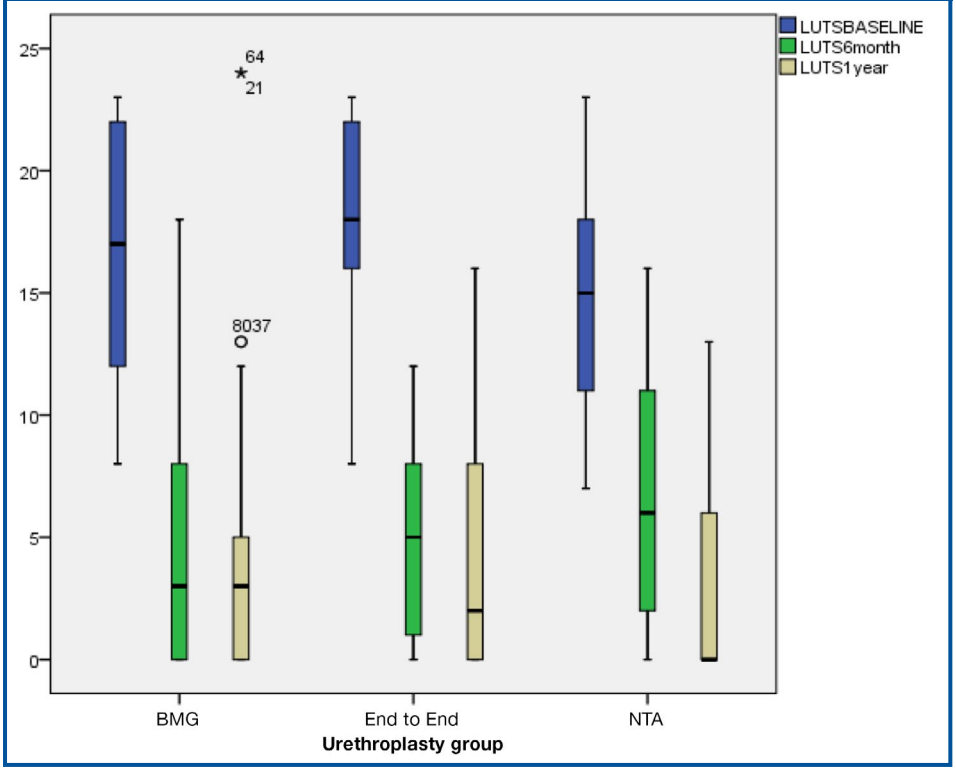
MP-08.19, Figure 1. LUTS Median with Interquartile Difference at Baseline, 6 Month and 1 Year



MP-08.19, Figure 2. LUTS Score in Three Types of Urethroplasties at Preoperatively, 6 Month Postoperatively and 1 Year Postoperatively



MP-08.19, Figure 3. Mean EQ-VAS Score before, 6 Month and 1 Year after the Three Urethroplasties Individually



and 21.3%, respectively. The improvement of ejaculatory function in posterior urethral stricture was more significant. The post-operation EF decreased in posterior urethral stricture significantly. (4) The end to end anastomosis and graft replacement were the most commonly used, and the incidence of postoperative ED was 20% and 13.4%, respectively. (5)The effects of preoperative complications and sexual function, surgical experience and surgical technique quality could not be evaluated due to insufficient data. (7) Most postoperative sexual outcomes were evaluated by IIEF-5 and SHIM. 16 studies were followed up for more than 12 months.

Conclusion: The sexual outcomes of urethral reconstruction patients were multifactorial and exact weights were unclear. The sexual dysfunction may be correlated with the location of stricture and operation mode of choice. More rigorousclinical studies included case series are needed, and the outcomes and study papers should be reported standardly according to the SCARE Statement.

MP-08.21

Non-Urethral Complications following Hypospadias Repair

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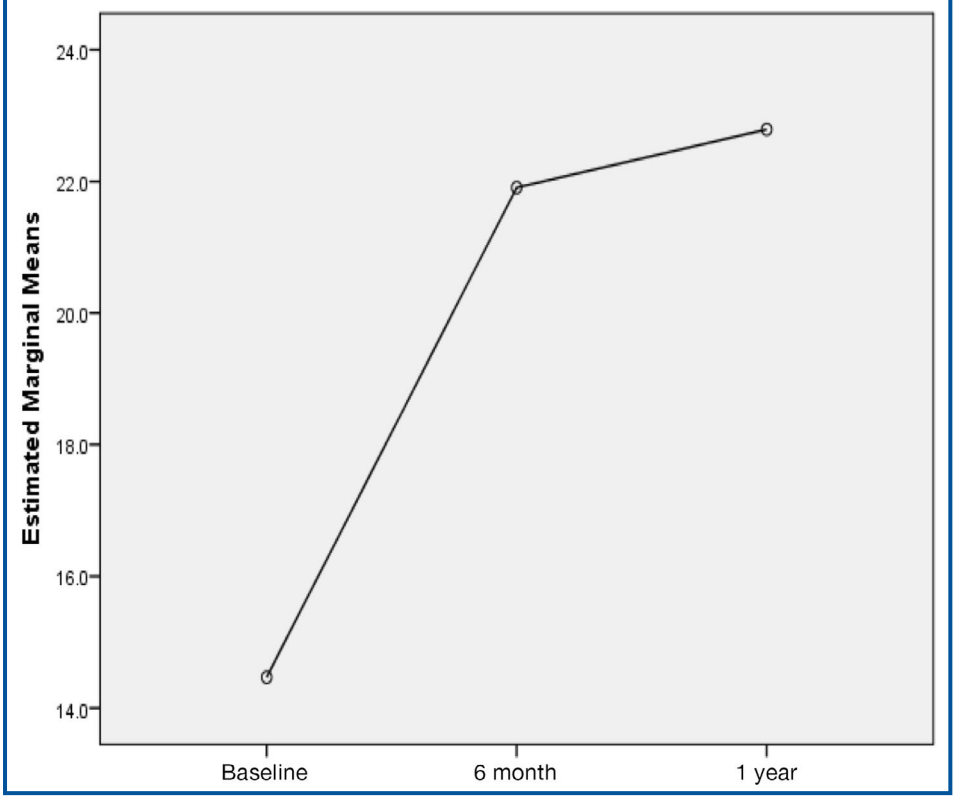
Introduction and Objective: Complications after hypospadias repair could be related to urethra or "non-urethral" complications. The most common non-urethral complications after hypospadias repair are: glans deformity, residual curvature and trapped penis due to deficiency of penile skin. Aims of this study are to present treatment of these complications and to highlight its impact on patients' life.

Materials and Methods: During period from January 2003 to October 2016 ninety two patients, aged 4 to 39 years (mean 23) underwent surgical repair of non-urethral complications after hypospadias repair. Mean period after inital hypospadias repair was 14.2 years. The most common complications included: glans deformity (34), residual curvature (46) and trapped penis (31). Some of the patients had two or more complications at the same time. Radical approach was used to correct all deformities and to achieve satisfactory outcome. Glans deformity was repaired in 28 patients by creation of conically shaped glans after making of wide glans wings, while in 6 cases "double face" skin flap was used to enlarge small and deformed glans. Residual curvature was repaired by tunical plication in all cases, while in 24 cases additional urethral reconstruction was needed. Trapped penis was a result of penile skin deficiency due to inappropriate surgical treatment. Quality and elasticity of remaining penile skin was reevaluated before reconstruction, with special attention to impaired blood supply. Vascularized genital skin flaps or free skin grafts were applied for complete covering of erected penile body.

Results: Follow up was 6 to 171 months (mean 63). Seventy six patients were successfully solved in one stage while fifteen patients (16%) required additional surgical treatment for successful repair of non-urethral complications. Nine patients underwent repeated penile skin reconstruction due to severe scar formation and six patients underwent repeated correction of the penile curvature due to its late onset.

Conclusions: Non-urethral complications after hypospadias repair carry a risk of repeated surgery and

MP-08.19, Figure 4. Erectile Function (EF) Score before, 6 Month and 1 Year after the Urethroplasty Group



may lead to severe sexual and psychological dysfunction. Active surgical treatment should enable full sexual functionality. Due to late onset of these complications, follow-up of these patients should be extended until beginning of their sexual activity.

MP-08.22

Transvesical Ventral Buccal Mucosa Graft Inlay Cystoplasty for Reconstruction of Refractory Bladder Neck Contractures after Benign Prostatic Hyperplasia Surgery: Surgical Technique and Preliminary Results of Combined Institution Data

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Introduction and Objective: Bladder neck contracture (BNC) following BPH surgery is a complication often managed by chronic catheterization or diversion with suprapubic tube. Refractory cases are challenging to treat. Those wising to avoid traditional management may be treated with reconstructive surgery using an open approach. The aim of this study is to introduce a novel surgical technique for the reconstruction of refractory BNC using buccal mucosal graft (BMG) inlay through a transvesical approach.

Materials and Methods: A retrospective analysis of patients that underwent open reconstructive surgery for refractory BNC after BPH surgery from 2010-2016 by surgeons from two institutions (BJF, DN). Steps of the procedure: transvesical ventral wedge resection of the fibrotic bladder neck contracture and spread fixation of appropriately sized BMG inlay. The patients were followed for post-operative complications and stricture recurrence with uroflowmetry, PVR, cystoscopy and outcome questionnaires. Outcome measures included length of follow-up, surgical technique, operative time, hospital stay, complications, and subsequent need for catheterization

Results: Fourteen patients underwent reconstruction with transvesical ventral buccal mucosa graft inlay bladder neck reconstruction. Prior BPH surgery included transurethral resection of the prostate (78%), plasma vaporization of prostate (21%), and open prostatectomy (7.1%). Urinary retention (72%) was the most common presenting symptom and 79% of patients were using a catheter (Foley, suprapubic, self-catheterization) pre-operatively. An average of 2.3 endoscopic procedures was performed before BNC reconstruction. Overall, BNC diameter was 9.8 Fr. The average BMG size was 11.3 cm2, operative time was 360 minutes, and hospital stay was 2.9 days. Postoperatively, one patient was unavailable for follow-up. Those with 4 or more month of follow-up were included for post-operative analysis, for a total of 11 patients. Of these, four patients had transient urinary retention and two had epididymorchitis. At a mean follow-up of 19.8(4-62) months, only two patients had chronic retention and were considered a procedure failure

Conclusion: BNC after BPH surgery is challenging complication with opportunity for surgical correction in refractory cases. Transvesical ventral BMG inlay bladder neck reconstruction is a feasible option in this scenario. This graft augmentation technique using buccal mucosa graft provides good outcomes with low morbidity for patients that previously failed multiple endoscopic treatments.

Moderated ePosters Session 9 Stones II

Saturday, October 21
1415–1545

MP-09.01

Tailored Optimal Perioperative Antimicrobial Prophylaxis in Retrograde Intrarenal Surgery: Evidence from a Prospective Randomized Trail

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Introduction and Objective: To evaluate the incidence of infectious complications after zero vs single vs two doses of antibiotic prophylaxis (ABP) in patients undergoing retrograde intrarenal surgery (RIRS), as the appropriate prophylaxis is unclear for this procedure.

Materials and Methods: A prospective randomized trial was conducted between August 2014 and November 2016. 300 consecutive patients with preoperative sterile urine undergoing RIRS were randomized into three groups and received ciprofloxacin-based different ABP regimes (group 1, zero-dose; group 2, single dose, 30 min before the start of surgery; group 3, two doses, first dose at 30 min before the start of surgery and additional dose within 6 hours postoperatively). The primary endpoint was the systemic inflammatory response syndrome (SIRS).

Results: A total of 265 patients (group 1: 88, group 2: 88, group 3:89) were eligible for final analysis. Baseline characteristics were similar between three groups. SIRS was recorded in 8 (9.1%), 3 (3.4%) and 1(1.2%) patients in group 1, 2, 3, respectively. In subgroup analysis, SIRS occurred respectively in 5.0%, 5.1% and 0% of patients with stones ≤ 200mm2 (P=0.257); for stones> 200mm2, low rates of SIRS were still observed in group 2 (0%) and group 3 (2.7%), however, 17.9% were developed in group 1 (P=0.011). No urosepsis were developed in any groups.

Conclusions: RIRS without antibiotic prophylaxis is safe for low-risk patients with stones ≤200mm2, and prophylactic antibiotics are not recommended for those patients. However, single dose prophylaxis seems necessary and sufficient for patients with stones>200mm2.

MP-09.02

Worldwide Use of Anti-Retropulsive Techniques: Observations from the CROES Ureteroscopy Global Study

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Introduction and Objective: Retropulsion, defined as the intended or unintended migration of a stone under the influence of the fragmentation device in URS procedures, occurs in 2-60% of the cases. Anti-retropulsive devices have been studied in experimental and small clinical studies. Current study aims to describe the worldwide use and consequences of anti-retropulsive devices usage.

Materials and Methods: The CROES URS Global study examined 11885 patients whom underwent a URS procedure for ureteral and renal stones. Out of the 11885 treated patients, 9877 were treated for ureteral stones, and had known information on migration and anti-retropulsive device use.

Results: 14.5% of the URS procedures is performed with the use of an anti-retropulsive device. Less migration (-1.7%), higher stone free rates (2.6%), more complications (1.6%), and shorter length of stay (-3.0%) are observed in patients treated with the use of an anti-retropulsive device, compared to those not treated with an anti-retropulsive device.

Conclusion: When an anti-retropulsive device is used, less migration, higher stone free rates, more complications, and shorter length of hospital stay are observed, compared to those not treated with an anti-retropulsive device. This effect is independent from baseline differences and corrected for other treatment characteristics.

MP-09.03

Complications and Learning Curve of Flexible Ureteroscopic Lithotripsy in 1000 Consecutive Cases

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Introduction and Objective: The flexible ureterorenoscope (URS) and associated devices have developed rapidly. However, despite its therapeutic benefits, it may be associated with serious complications. The aims of this study are to assess learning curve effect of the complications and inaccessible ureter of the flexible ureterorenoscope.

Materials and Methods: A retrospective review of the records of 1000 cases that underwent flexURS from April 2010 to August 2016 was performed. To compare the complications and inaccessible ureter after introduction of flexURS, the patients were divided into five groups (First 200 to Fifth 200, respectively). The complications were classified using the Clavien system (1 to 5). Statistical analysis was performed using the X2 test (SPSS Statistics 20). If the stone at a distal ureteral lesion was inaccessible with the ureteroscope, the ureteral stent was left in place without active dilation. URS lithotripsy was then attempted again about 2 weeks later.

Results: The mean operation time, stone-free rate were significantly different (p<0.001, p=0.013, respectively). The total Clavien grade 3-5 complication rates were 8%, 4.5%, 3%, 3% and 2%, respectively (p=0.005). The complication rate tended to decrease gradually with increasing surgeon's experience. Despite our best efforts, the incidence of urosepsis was not reduced (p=0.451). The rates of inaccessible ureter were 3.5%, 1.5%, 1%, 1% and 0.5%. All affected ureters were then sufficiently dilated to pass the ureteroscope by stenting, and the second URS lithotripsy was successfully completed in all patients.

Conclusion: To reduce severe complications, it is necessary to have performed about 200 cases. Increased surgeon experience tended to decrease the risk of severe complications and inaccessible ureter, but the incidence of urosepsis was not reduced. Active dilation may not be required in patients with inaccessible ureter at URS lithotripsy, passive dilation by pre-stenting is a safe and attractive procedure for such patients. To the best of our knowledge, there are no studies of

MP-09.03, Table 1.

Group	First 200	Second 200	Third 200	Fourth 200	Fifth 200	over all (cases)
Intra-operative complication (cases)	**9**	**3**	**3**	**1**	**1**	**17**
Mucosal injury	2	1	1	0	0	4
Significant bleeding	1	1	1	0	0	3
Ureteral perforation or avulsion	6	1	1	1	1	10
Early complication (cases)	**3**	**3**	**2**	**4**	**2**	**14**
Urosepsis	3	3	2	4	2	14
Late complication (cases)	**4**	**3**	**1**	**1**	**1**	**10**
Ureteral stricture	2	1	1	1	1	6
Retained ureteral stent	2	2	0	0	0	4
Total (cases)	**16**	**9**	**6**	**6**	**4**	**41**
Inaccessible ureter (cases)	7	3	2	2	1	15

Medical complications (Clavien grading scale III IV) of flexURS for renal and ureteral calculi observed during the learning curve

the complications and inaccessible ureter of flexURS during the learning curve

MP-09.04

Efficacy and Safety of Retrograde Intra-Renal Surgery (RIRS) for Stones in a Solitary Kidney: Evidence from a Systematic Review

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Introduction and Objective: Surgical intervention for stones in the solitary is a difficult management scenario for the endourologist. With the recent advances in technology, retrograde intra-renal surgery (RIRS) offers a potential therapeutic choice. To date no Level 1 evidence exists on this subject. Our objective was to perform the first systematic review to evaluate the safety and outcomes for RIRS in a solitary kidney.

Materials and Methods: Systematic review was carried out in accordance with Cochrane collaboration guidelines and the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) checklist. A pre-defined search strategy was applied to bibliographic databases including Medline, Embase and Biomed Central. Primary outcome measures were initial and final Stone Free Rates (SFRs). Additional data was collected on baseline characteristics and adverse events (graded by Clavien classification).

Results: Seven studies (196 patients) with a mean age of 51 years (range: 18-80 years) and a male: female ration of 3:2 underwent RIRS for stones in a solitary kidney. The mean BMI was 26.5 kg/m2 (range 21-38) and a mean stone size of 15.35 mm (10-26 mm). The Initial and final SFR were 75.8% and 94.1% respectively with a mean of 1.2 procedures/patient, and a mean operative time of 66.5 minutes. All cases underwent post-operative stenting. The overall complication rate was 22.4% and majority (75%) were minor (Clavien I/!! complications). Major complications (Clavien III/IV) occurred in 1.5% of cases and these were all steinstrasse causing anuria and acute kidney injury with no deaths reported in this review. Quality of evidence appraisal revealed that while all studies were retrospective cohort studies, methodology was robust with complications well reported.

Conclusion: RIRS is a feasible intervention for patients with solitary kidney and stone disease. It renders a high SFR with an acceptable complication rate and should be a good choice for majority of patients with a solitary kidney.

MP-09.05

Which Preoperative Scoring System Would Be Better for Predicting Outcomes of Pediatric Percutaneous Nephrolithotomy? Guy's Or S.T.O.N.E. Nephrolithometry

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Introduction and Objective: There have been no validated data for use of Guys stone score and STONE nephrolithometry scoring systems for use in children for assessing and predicting the perioperative outcomes and stone free rates. This study aimed at comparing the effectiveness of both scoring systems.

Materials and Methods: Total of 72 children were included in this retrospective study from January 2011 till September 2016.They had mean age of 7.3±4.97 years with mean stone size of 464±255 mm2 .They underwent Guy's and S.T.O.N.E. scoring systems were calculated for each patient. Regression analysis and ROC curves were performed.Preoperatively, all patients wereroutinely evaluated byroutine urine analysis and culture, complete blood count, coagulation tests, serum creatinine, andX-ray plain chest film. Patient's exclusion criteria were presence of urinary tract infection, coagulationabnormalities, single kidney or skeletal deformity. Post operatively they underwent assessment for presence of residual stone fragments on X-ray KUB or ultrasound. All patients underwent PCNL by using adult instruments in prone position under general anesthesia. Their chart review was done to look for different variables regarding perioperative outcomes .Mean and standard deviation was used for continuous variables, while chi square test was used for assessing significance of categorical values. P value of less than 0.05 was deemed statistically significant.

Results: The mean Guys score was 1.92±0.6, and mean STONE score was 6.38±1.07.There was strong correlation between Guys stone score and stone free rate (p 0.02).However operative time was not significantly different between the Guys score groups (p 0.55).Similarly Guys score was not strongly related to hospital stay differences (p 0.09).However the difference of complications between Guys stone score groups were significant (p 0.023). On the contrary STONE score was not significantly different between stone free and stone failure groups. Similarly perioperative outcomes, operative time, hospital stay and complication rates were not significantly different between the STONE score groups (p 0.07, 0.42, 0.07).

Conclusion: It was found that Guys stone score was strongly correlated with stone free rates and complications. Interestingly there was very weak correlation between STONE nephrolithometry scoring system and stone free rates and complications.Further studies are needed for efffectiveness of these scores.

MP-09.06

Concordance between Preoperative and Intraoperative Urine Culture in PCNL

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Introduction and Objective: During percutaneous nephrolithotomy (PCNL) it is recommended to take a sample for urine culture (UC) obtained from the upper urinary tree.Some studies suggest that patients with negative preoperative UC have infected urine in the sample taken from the renal pelvis during the procedure. In this study, we analyzed the results of preoperative UC taken from the low urinary tract by spontaneous urination and compare them to high UC taken by puncture of the patient's renal pelvis during the procedure. The aim of this study was to determine the correlation between preoperative UC and intraoperative UC. A secondary objective is to determine risk factors for infectious complications after PNL.

Materials and Methods: We reviewed the medical records of all patients who underwent PCNL during the period between September 2014 and June 2016 at the Italian Hospital in Buenos Aires. One hundred seventy PCNL were performed. Six patients were excluded from the study due to lack of data in the medical records. A cross-sectional study included 164 patients. The variables analyzed were: age, sex, diabetes, prostatism, history of previous instrumentation, preoperative and intraoperative urine cultures, lithiasis size and postoperative evolution. Preoperative cultures were evaluated and compared to urine cultures taken by an intraoperative puncture. Differences in germ and sensitivity were evaluated and related to postoperative infectious complications

Results: A total of 164 patients were analyzed in the study. Ninety (54.9%) were male. The mean age was 53.3 years (18-90). Thirty-nine patients (23.7%) had a history of previous instrumentation. Fifty-seven (34.8%) preoperative UCs were positive, of which almost half (43.9%) also had high positive intraoperative UC. Of the group that presented both UC positive, 76% presented a change in the sensitivity of the germ. Eleven (6.7%) with negative preoperative UC had high positive intraoperative UC. The rate of postoperative infectious complications was 7.3%.

Conclusions: In our study, there was no concordance between the preoperative UC and the intraoperative UC taken by a puncture. We were not able to determine risk factors associated with postoperative complications.

MP-09.07

The Clinical Effects for Ultrasound Guided Paravertebral Nerve Block Anesthesia of Percutaneous Nephrolithotomy

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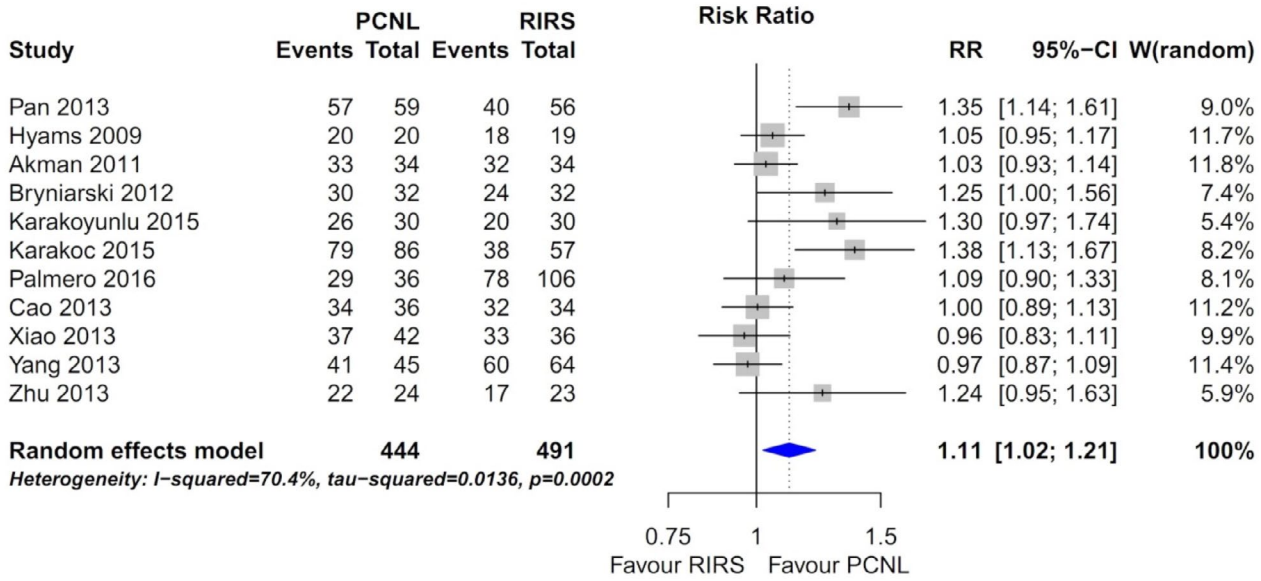
Introduction and Objective: To assess the clinical safety and feasibility for ultrasound guided paravertebral block anesthesia of percutaneous nephrolithotomy.

Materials and Methods: Between December 2015 to June 2016, 180 patients with renal or ureteral calculi were enrolled and evaluated with ultrasonography and CT scan. Of all the 180 patients, 108 were males and 82 females. Their mean age was 39.2 years (23-71years). The clinical characteristics of the patients in each group, such as age, gender, BMI index, ASA sataus, mean arterial pressure and disease type had no significant differences (P>0.05). These patients were randomly enrolled into group general anesthesia (G group), group combined spinal epidural anesthesia (C group) and group paravertebral nerve block anesthesia (P group) and underwent percutaneous nephrolithotomy. Periprocedural Vital signs, complications, postoperative the eating time, hospitalized day and expense in these three groups were evaluated.

Results: Major intraoperative or postoperative complications did not occur in all of the patients. Mean arterial pressure decreased during preoperative chang-

MP-09.08, Figure 1. Forest Plots for Stone-Free Rate between RIRS and PCNL



ing positions was observed in group G and group C, with significant difference in intra-group (P<0.05). Postoperative nausea and vomiting was observed in 8 and 2 patients of group G and group P, respectively (P<0.05). Postoperative pain was observed in 2 and 7 patients of group C and group P, respectively (P>0.05). In addition, group P had with the early eating time post operation, shorter hospitalized day and lower hospitalized expense compared with other groups(P<0.05).

Conclusions: Ultrasound guided paravertebral block can provide safe and reliable surgical anesthesia for percutaneous nephrolithotomy, which can accelerate the patients' recovery and is worth widely clinical application and spread.

MP-09.08

Systematic Review and Meta-Analysis to Compare Success Rates of Retrograde Intrarenal Surgery versus Percutaneous Nephrolithotomy for Renal Stones > 2 Cm: An Update

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Introduction and Objective: Two in the European Association of Urology (EAU) Guidelines on Urolithiasis, SWL and RIRS are suggested equally as treatment methods for renal stones less than 2 cm diameter, but for stones larger than 2 cm, PCNL is recommended as the first-line treatment. Based on these results, in 2014, Zheng et al. published a meta-analysis comparing the effects of RIRS and PCNL for renal stones larger than 2 cm. This study includes additional articles published since 2014 and a re-analysis of stone-free rates, with statistical verification.

Materials and Methods: Randomized controlled trials comparing RIRS and PCNL for >2 cm stones were identified from electronic databases. Once the final group of articles was agreed upon, two researchers independently examined the quality of each article using the Downs and Black checklist. Stone-free rates for the procedures were compared by qualitative and quantitative syntheses (meta-analyses). Outcome variables are shown as risk ratios (RRs) with 95% confidence intervals (CIs).

Results: Eleven articles were included in this study. Most recently published studies exhibited relatively low quality during quality assessment. For the meta-analysis comparing success (stone-free) rates between PCNL and RIRS, the forest plot using the random-effects model showed an RR of 1.11 (95% CI, 1.02–1.21; P<0.014) favoring PCNL (Fig 1). After determining the among-study heterogeneity, subgroup analysis was performed of nine studies with less heterogeneity: the stone-free rate of PCNL was superior to that of RIRS using a fixed-effect model (RR, 1.07; 95% CI, 1.01–1.14; P<0.019) for these studies.

Conclusions: RIRS can be a safe and effective procedure for selected patients with large renal stones. However, in this meta-analysis, the postoperative stone-free rate of PCNL was higher than that of RIRS in patients with >2 cm renal stones.

MP-09.09

The Role of Super-Mini Percutaneous Nephrolithotomy (SMP) in the Treatment of Symptomatic Lower Pole Renal Stones (Lpss) after the Failure of Shockwave Lithotripsy (SWL) or Retrograde Intrarenal Surgery (RIRS)

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Introduction and Objective: To assess the safety and efficacy of super-mini percutaneous nephrolithotomy (SMP) in the treatment of symptomatic lower pole renal stones (LPSs) after the failure of shockwave lithotripsy (SWL) or retrograde intrarenal surgery (RIRS).

Materials and Methods: We retrospectively evaluated 44 patients with symptomatic LPSs who previously failed SWL or RIRS treatment and consequently underwent SMP between October 2014 and June 2016. The percutaneous renal access was performed 12-14F in size with C-arm fluoroscopy or ultrasonographic guidance. Stone disintegration was performed using either Holmium laser or pneumatic lithotripter. Perioperative parameters along with operative data were assessed in detail.

Results: A total of 44 patients (mean age 49.1±13.7 years) with LPSs were included in the study. Mean stone size was 18.4±6.0 mm (range 9-29), mean operative time was 63.9±32.7 minutes (range 14–145) and mean hospital stay was 2.8±1.2 days (range 1-5). The hemoglobin drop was 12.4±8.8 g/L (range 0-31), no patients required blood transfusion. Complete stone-free status (SFR) was achieved in 40 (90.9%) patients. Clinically insignificant residual fragments (CIRF) were observed in three (6.8%) patients and only one (2.3%) patient had a 6 mm residual calculus. A total of three minor complications (urinary tract infection, hemorrhage resolved by hemostatics and renal colic requiring analgesics) were observed postoperatively.

Conclusion: For symptomatic LPSs after the failure of SWL or RIRS, SMP is a safe and efficient auxiliary option and even might be an alternative to SWL or RIRS, while further considering the stone free rates and stone-related events.

MP-09.10

Percutaneous Nephrolithotripsy in New Cases versus those with Previous History of ESWL on Ipsilateral Side

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Introduction and Objective: ESWL is gold standard treatment for renal stones of size up to 2 cm while PCNL is used to remove larger and complex stones (size more than 2 cm). The previous literature has demonstrated that PCNL is more challenging after prior open surgical intervention due to the distorted renal anatomy, fibrosis or scarring. Similarly, repeated SWL also contributed to fibrous changes and distortion of collecting system. Few studies have evaluated so far the effects of previous E SWL history on the operative outcome and complications of PCNL. We compared the outcome of PCNL and the differences between those with history of ESWL and those without previous ESWL on ipsilateral side on which PCNL was performed.

Materials and Methods: All patients included were more than 18 years old. They were divided into two groups, group one being patients with history of ESWL and second being patients without history of ESWL. There were 35 patients with, and 158 without any history of ESWL. Preoperative evaluation with X-Ray KUB, Non contrast CT scan and Ultrasound KUB, complete blood picture, serum biochemistry, renal function tests, and PT /APTT and urine culture tests. Consent was taken from them and PCNL was done by standard technique. Patient's records were checked from charts and analyzed for mean age, mean operative time, mean hospital stay, stone clearance rates, post operative complications. SPSS 16 was used for data analysis.

Results: The mean ages in the two groups were 42.54±12.98 and 44.71±14.42 years respectively. Mean stone sizes in cm were 3.09±1.82 and 3.56±1.94 respectively. Total mean operative time was 146.6±65.0 and 132.7±49.72 minutes in the two groups. Total mean hospital stay was 3.15±1.22 and 3.18±1.14 days. Stent was placed in 23/35 and 81/158 patients respectively. Nephrostomy tube was placed in 18/35(51.43%) and 93/158(58.86%) patients respectively. Stone clearance was 79.64±25.64 % and 82.7±23.1% respectively (P value 0.48). Complications including sepsis, perinephric collection, respiratory tract infection and post op blood transfusion were seen in 0/35(0%), 1/35(2.86%), 1/35(2.86%) and 0/35(0%) patients with history of ESWL, while in those without history of ESWL these complications were 6/158(3.8%), 9/158(5.69%), 2/158(1.26%) and 4/158(2.53%) respectively.

Conclusion: There was no significant difference in the outcome of PCNL in terms of mean operative time, stone clearance rates, hospital stay and complication rates between the two groups.

MP-09.11

Surgical Planning for the Treatment of 2-3 Cm Kidney Stones: Retrograde Intrarenal Surgery or Mini-Percutaneous Nephrolithotomy? A Retrospective Compared Study

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Introduction and Objectives: To determine the best surgical planning, retrograde intrarenal surgery (RIRS) or mini-percutaneous nephrolithotomy (MPCNL), to treat the kidney stones sizing 2 - 3 cm.

Materials and Methods: A retrospective compared study was conducted between December 2015 and July 2016, which enrolled 276 cases encompassing 2-3 cm kidney stones treated by RIRS (n=147) and MPCNL(n=129). Surgical outcomes were evaluated. Preoperative predictive factors for estimating the stone-free rates (SFR) in RIRS was assessed. The results were used for the creation of a predictive model, and its predictive accuracy was evaluated by receiver operating characteristic (ROC) curve.

Results: SFR after one session were lower in the RIRS group than that in the MPCNL group (66% vs. 95.3%, p<0.001), and the complications rates were similar without significant difference between two groups (12.2%% vs. 8.5%, p= 0.315). On multivariate analysis, these three factors (lower calyx involved [OR 2.67], previous ipsilateral PCNL [OR 4.49], Hounsfield units >900 [OR 2.38]) were significant predictors for SFR after RIRS. SFR decreased with increasing number of predictors, from 80.6%, 72.2%, 54.3% to 36% in corresponding to patients with 0, 1, 2, 3 predictors respectively (p=0.01). Based on ROC analysis, the number involved of predictors were significantly associated with SFR (AUC [95% CI] = 0.657 [0.56-0.75]; p=0.002).

Conclusions: RIRS showed lower SFR for 2-3 cm stones compared to MPCNL, and the number involved of predictors (lower pole location, Hounsfield units, and previous ipsilateral PCNL) has good preoperative predictive accuracy for SFR and can help urologists guide the surgical planning.

MP-09.12

Effect of Body Mass Index on Outcome of Percutaneous Nephrolithotomy: Single Center Study

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Introduction and Objective: Several studies have indicated that obesity is an independent risk factor for surgical and anesthetic complications. Our objective in this study was to compare outcomes and complications of PCNL in patients of various body mass indices (BMI).

Materials and Methods: All patients included were of age more than 18 years old. They were divided into three groups of BMI. There were 91 patients in normal weight (18.5 to 24.9 kg/m2), 146 overweight (24.9-29.9 kg/m2) and 82 patients in obese group (more than 30 kg/m2). All patients had to undergo preoperative evaluation with X-Ray KUB, Non contrast CT scan and Ultrasound KUB, complete blood picture, serum biochemistry, renal function tests, and PT /APTT and urine culture tests. Consent was taken from them and PCNL was done by standard technique. Patient's records were checked from charts and they were analyzed for mean age, mean operative time, mean hospital stay, stone clearance rates and post operative complications. SPSS 16 was used for data analysis. Frequency was used for qualitative variables while mean ± SD was calculated for quantitative variables like age, mean operative time etc.

Results: The mean ages in the three BMI groups were 41.24±17.06 years, 46.10±13.30 years and 44.40±12.71 years respectively. Mean stone sizes in cm in the BMI groups were 3.35±2.08, 3.87±2.61 and 3.27±2.05.Total mean operative time was 142.09±62.79 minutes, 143.02±60.48 and 140.89±52.09 minutes respectively in three groups. Total mean hospital stay was 3.61±1.35 days, 3.24±1.34 days and 3.054±1.07 days respectively. Stent was placed in 55/91, 91/146 and 53/82 patients respectively. Nephrostomy tube was placed in 52/91, 85/146 and 50/82 patients respectively. Stone clearance was 76.57±26.7 %, 79.76±24.67% and 85.50±20.51% respectively (P value equals 0.7944). Complications including sepsis, perinephric collection, respiratory tract infection and post op blood transfusion , were seen in 10/91, 10/146 and 9/82 patients.

Conclusion: There was no significant difference in the outcome of PCNL in terms of mean operative time, stone clearance rates, hospital stay and the complication rates between the three BMI groups.

MP-09.13

Comparision of Percutaneus Nephrolithotomy and Laparoscopy Outcome in Management of Large Proximal Ureteral Stone

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Introduction and Objective: Urinary stones are the third widespread disease of urinary system. There are different treatment surgical methods for proximal ureteral stone. Every method has some advantages and disadvantages that used in different conditions. In this study we compared success rate and complications of two kind of surgery: PCNL and laparoscopy in management of large proximal ureteral stone.

Materials and Methods: In these cohort study the success rate and surgery complications of 52 cases suffering from proximal ureteral stone who had been operated with PCNL surgery by one of the supervisors of this study in Hamadan's Shahid Beheshti Hospital were compared with 55 cases suffering from proximal ureteral stone who had been operated with laparoscopy surgery in Tehran's Shahid Labafi Negad Hospital.

Results: In PCNL surgery mean and standard deviation of patients age was 47.78±16.72 years old, 75% were male and 25% female. Place of stone constitution in 50% was right ureteral and 50% left ureter. Mean and standard deviation of surgery time duration was 22±9.4 minutes with 100% success rate. In laparoscopy surgery mean and standard deviation of patients' age was 42.92±16.72 years old. 83.6% were male and 16.4% female. Place of constitution in 46.60% was right ureter and 56.40% left ureter. Mean and standard deviation of surgery time duration was 107.43±22.86 minutes with 100% success rate. There was not any significant statistical difference between surgery type with variables of age, gender, constitution place of stone mean time duration of hospitalization after surgery, degree of hydronephrosis and success rate. In this study (P>0.05); but duration of surgery time in PCNL methods was significantly less than laparoscopy (P<0.001) and decrease in hemoglobin, hematocrit

and serum urea in PCNL surgery were more than laparoscopy surgery.

Conclusion: Two Percutaneous nephrolithotomy and laparoscopic surgical methods for the treatment of upper ureteral large stones had the same success rate, that according to hospital facilities, surgical team an patients conditions can be used.

MP-09.14

Safety, Feasibility, and Efficacy of Bilateral Synchronous Percutaneous Nephrolithotomy for Bilateral Stone Disease

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Introduction and Objective: With the evolution of endourologic technology, bilateral synchronous percutaneous nephrolithotomy (BS-PCNL) has emerged as a potentially practical intervention for patients with bilateral lithiasis. Although tradition has favored a staged approach, an increasing number of original studies have reported their experiences with the synchronous approach.

Materials and Methods: A Cochrane style search was performed after development of a sensitive and predefined search strategy. Primary outcomes measured were initial and final stone-free rate (SFR), drop in hemoglobin, hospital stay, operative time, and complication rates. Additional information was collected on (but not limited to) baseline characteristics, stone complexity, number of tracts made, success rate, and transfusion rate.

Results: From a total 187 studies, 11 were identified (published between 1997 and 2015), and they were included in this review. In total, 594 patients with a mean age of 46 years and a male: female ratio of 3:1 underwent BS-PCNL procedures, the majority of which was under the prone position. In 87.1% (range: 71.4%–100%) of cases, the synchronous approach was performed as planned. Multiple access tracts were established in an average of 16.7% (4.1%–24%) renal units. Mean initial SFR and final SFR were 72.6% (49%–85%) and 92.4% (87%–96.9%), respectively, with a mean operative time of 171.1 minutes (range: 107.4–269 minutes). Mean hospital stay was 3.9 days (range: 1.25–15 days). Mean complication rate per study was 23.4% (range: 12.1%–54% per study). The majority were Clavien Grade 1 (60.9%), of which fever resolving spontaneously was the most common complication. No deaths were reported in any of the papers.

Conclusion: BS-PCNL seems to be a good endourologic approach for patients with bilateral stone disease, which can render high SFRs and maintain a noninferior safety profile compared with the staged approach. This technique demands careful patient selection, counseling and should be preferably performed in endourology centers with large case volumes.

MP-09.15

Comparison of Outcome of Quality of Life in Day Case versus Inpatient PCNL in Elderly Age Group

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Introduction and Objective: This prospective study was done to compare the effects of Inpatient and Day care PCNL on elderly Patients' QoL in the short term (one week and one month).

Materials and Methods: All patients underwent preoperative evaluation with X-Ray KUB, Non contrast CT scan and Ultrasound KUB, complete blood picture, serum biochemistry, renal function tests, and PT/APTT and urine culture tests. Consent was taken from them and PCNL was done by standard technique. To measure acute QoL, patients were asked to complete the questions in response to how they have felt in the last week and one month according to Short-Form 12 Health Survey (SF-12). SPSS 16 was used for data analysis.

Results: There were 66 patients in group A (Inpatient PCNL) and 36 patients in group B (Day case PCNL). The total mean stone size was 3.35±2.01 cm and 3.17±.8cm respectively in these groups. Total mean hospital stay was 3.4±1.2 days and 16.2±2.10 hours respectively. PCS (physical component summary) base line was 36.7 ±11.3 in inpatient group which increased to 40.4 ±8.6 at one week and 43.2± 6.9 at one month. While in the patients in day care group PCS base line score was 37.5 ±10.4 which increased to 41.56±7.3 at one week and 44.2±1.7 at one month (p 0.81). MCS (mental component summary) baseline score in inpatient group was 48.2± 12.7 that increased to 50.5± 11.5 at one week and to 52.5± 10.3 at one month. MCS baseline score in Day care group was 49.3± 11.6 that increased to 51.5± 10.3 at one week and to 54.5± 9.2 at one month (p 0.94).The main difference was in body pain score which was better in the Inpatient group (p 0.04).Social function score was better in Day care group (p 0.03).

Conclusions: No difference in terms of stone free rates or complications was seen in two groups. The body pain score was better in inpatient group while social score was better in Day care group. More large scale studies are needed to clear the causes for the differences.

MP-09.16

Percutaneous Nephrolithotomy (PCNL) in Patients with Chronic Kidney Disease (CKD): Efficacy and Safety

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Introduction and Objective: While the effects of percutaneous nephrolithotomy (PCNL) on patients with normal functioning kidneys have been widely studied, the outcomes of PCNL in populations with renal insufficiency remains under reported. Our objective was to examine the literature and evaluate the efficacy and safety of PCNL in this non-indexed patient group.

Materials and Methods: A systematic search was performed in accordance with Cochrane guidelines. This served to identify original studies investigating PCNL carried out in the adult population with chronic kidney disease published over the past 20 years (since 1997). The primary outcome was the change in renal function. Secondary outcomes included complete stone free rate (SFR) and reported complications

Results: In total, 9 studies were identified, which met our pre-defined inclusion criteria. These were all cohort studies. Four studies utilised GFR to measure changes in renal function. In these studies mean pre-operative, post-operative and follow up eGFR was 31.4, 35.1 and 36.9 mL/min/1.73 m2 respectively. The remainder recorded changes in serum creatinine. Mean pre-operative, post-operative and follow up serum creatinine were 3.48, 2.4 and 3.0 mg/dL respectively. One study incorporated both systems and 1 study did not measure change in renal function post PCNL. In those patients with established end stage renal function (taken as CKD 5), the majority of patients suffered worsening of renal function. Mean overall complication rate was 25.8% (range 15.2-33.8%). A total of 672 complications were reported across all the studies. These were distributed as following: Clavien I: 38%, Clavien II: 29%, Clavien IIIa: 11%, Clavien IIIb: 3%, Clavien IVa: 13%, Clavien IVb: 4%, Clavien V: 2%. Mean Hb drop was 2.5 g/dL across the 4 studies recording it with a mean transfusion rate (Clavien II) of 19.8%. In total, 16 deaths (0.8%) were recorded across the whole cohort and nearly all were due to sepsis and shock in elderly patients.

Conclusion: PCNL is an effective feasible intervention for patients with chronic renal insufficiency. It can improve overall renal function by nearly 10%, however is associated with significant co-morbidity. Therefore, careful patient selection and thorough surgical practice is required to yield favourable outcomes.

MP-09.17

Management of Delayed Post PCNL Bleeding

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Introduction and Objective: We reviewed the delayed intermittent hematuria following PCNL in a single surgeon series.

Materials and Methods: Data from 1326 patients who underwent PCNL in our department between April 2011 tand January 2017 were retrospectively reviewed. Overall 21 patients who experienced delayed intermittent hematuria and diagnosed with Arterivenous fistula (AVF) formation were included. Eighteen patients had staghorn calculus and 12 patients needed mulpiple accesswith superior calyceal entry. Ten patients had raised creatinine value ranging from 2.1 to 5.5.

Results: Twenty one patients with a mean age of 39 (range 21 to 60) and male to female ratio of 2:1 were readmitted to hospital with delayed intermittent hematuria followinf PCNL. Eight patients needed blood transfusion. Angiography revealed AVF in 21 patients and single session angioembolisation done in all patients with 100 percent success.

Conclusion: AVF is one of the common causes of post PCNL hemorrhsge. Staghorn calculus, mulpiple access, obstructive uropathy and upper polar entry increases the bleeding risk. Surgeons should be careful in dealing with those patients with prorer patient counselling and information regarding the risks involved.

MP-09.18

Analysis of Outcomes of Surgical Intervention and Metabolic Evaluation in Pediatric Renal Stone Disease

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Introduction and Objective: The incidence of nephrolithiasis is known to be high in the Saurashtra and Kutch region of Gujarat in India. PCNL has been accepted as a well-established, minimally invasive procedure in children.The metabolic evaluation for urolithiasis helps us to identify children who are at increased risk for recurrent stone disease and also to diagnose specific treatable metabolic derangements. Objective of study to assess the outcomes of surgical intervention in pediatric renal stone diseases & to assess the metabolic abnormalities in pediatric renal stone diseases.

Materials and Methods: Between April 2014 and April 2016, total 50 patients (below 18 yrs of age) were enrolled in study. All preoperative workup was done. PCNL procedure was done and stones were sent for analysis. Patients follow up after one month of Double J stent removal was done for 24 hours/ Spot urine analysis.

Results: Most common intra operative complications was bleeding in 5 patients (10%). Mean operative time was 51.6 minutes. Most common post operative complication was haematuria in 9 patients (18%). Complete stone clearance was achieved in 47 patients (94%). Mixed stones containing Calcium Oxalate Monohydrate and Calcium Oxalate Dihydrate are most common stones on analysis. On 24 hours/spot urine analysis, 27 patients (54%) were found to have hypercalciuria as a most common and 12 patients (24%) had hypocitrateuria as least common metabolic abnormality in urine.

Conclusion: Percutaneous nephrolithotomy is safe procedure for pediatric renal stone diseases. Calcium oxalate monohydrate and dihydrate are most common stone composition. Hypercalciuria and hyperoxaluria were the most common metabolic abnormalities for renal calculus formation in our pediatric patients.

MP-09.19

Percutaneous Nephrolithotomy in Transplanted Kidneys: An Effective and Safe Procedure

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Introduction and Objective: Urolithiasis in transplanted kidneys (UTK) is a rare condition, usually incidentally diagnosed, that can lead to urinary tract infections (UTI), obstruction and graft loss, ultimately. This project aims to assess the efficacy and safety of graft percutaneous nephrolithotomy (G-PCNL).

Materials and Methods: Retrospective review of G-PCNL performed between April 2002 and March 2017. Patients' demographics, previous medical history, perioperative characteristics and surgical details were analysed.

Results: De novo UTK was diagnosed in ten different patients (mean age of 52.5±14.3 years, 3 females), which resulted in 13 G-PCNL. UTK was diagnosed by ultrasonography (US), when investigating UTI (n=6) or acute kidney injuries (n=3). UTK was either renal (n=9) or ureteral (n=4). The overall median stone size was 24mm (interquartile range, IQR 13-34mm). Median time of UTK presentation was 3.9 years post-transplantation (IQR 2.8-5.9 years). Predisposing factors included hyperuricemia (n=3), recurrent UTI (n=3), hyperparathyroidism (n=2), and retained ureteral stent (n=2). Calculi size and location were the main criteria used for G-PCNL: any ureteral calculi or renal calculus >15mm. Patients were treated in supine, and an anterior calyx puncture was guided by both US and fluoroscopy. Combined ultrasound/pneumatic lithotripsy (n=7), LASER lithotripsy (n=3) or calculi extraction (n=2) was performed. In one patient, no calculus was found. Median operative time was 99 minutes (IQR 91-106 minutes). Stone-free status was achieved in 10 procedures (76.9%), and after a second G-PCNL in 3 patients, 92.3% were stone-free. There were neither intra-operative complications nor significant changes in serum creatinine levels postoperatively (1.36 vs. 1.23mg/dL, paired t-test, p=0.24). Median admission time was 5 days (IQR 4-7). Median follow-up time is 3.2 years (range 1.0-14.9 years): UTK recurred in 2 patients but did not meet surgical criteria.

Conclusion: UTK can lead to substantial morbidity, albeit a rare condition. In most patients, it is a silent problem that must be promptly and properly managed, as for solitary kidneys in general. G-PCNL is a safe and effective method associated with a high overall stone-free rate in one procedure in most instances. This approach should be considered in proficient centres.

Moderated ePosters Session 10 Prostate Cancer: Localized Disease

Sunday, October 22
1415–1545

MP-10.01

Comparison of Iron-Containing and Non-Iron-Containing Fiducial Marker for Prostate Radiotherapy in Visualization of CT and MR Images

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Introduction and Objective: Visualization of a fiducial gold marker is critical for registration on computed tomography (CT) and magnetic resonance imaging (MRI) for imaging-guided radiotherapy. While bigger markers have better visualization on MRI, they tend to generate artifacts on CT. Moreover, they are associated with more pain at insertion. In this study, we compared the use of a new iron-containing marker with that of a non-iron-containing marker.

Materials and Methods: Twenty-one patients underwent CT/MRI fusion-based intensity modulated radiotherapy. Markers were placed by urologists and they evaluated pain and bleeding. Gold Anchor™ (GA; diameter: 0.28 mm; length: 10 mm), an iron-containing marker, was placed on the right side of the prostate using a 22-G needle. VISICOIL™ (VIS) (diameter: 0.35 mm; length: 10 mm) was placed on the left side of the prostate using a 19-G needle under local anesthesia. T2*-weighted images MRI sequences were used. One radiation oncologist and one radiation technologist evaluated and assigned five points (1 is poor to 5 is best visible) scores for visual quality.

Results: Artifact generation on CT was slightly increased with GA compared with that with VIS. Visualization of GA marker on MRI imaging of prostate was superior to that of VIS (mean score: GA; 4.5 and VIS; 2.3 by observer 1, and GA;4.5 and VIS 2.6 by observer 2) significantly. .The actual size of spherical GA was 2 mm in diameter, but the signal void on MRI was about 5 mm. No severe pain and bleeding were found without astriction after insertion.

Conclusion: The iron-containing marker was strongly visualized in terms of signal void on MRI by both observers, and using 22G caused no severe pain or bleeding. We recommend using the iron-containing marker, which helps in the detection of markers in the prostate.

MP-10.02

Development and External Validation of a Novel Risk Score to Identify Insignificant Prostate Cancer

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Introduction and Objective: Active surveillance is increasingly used for insignificant prostate cancer (PCa). Tools have been developed to identify candidates using pre-operative factors. We evaluated the accuracy of 9 separate tools developed to identify patients harbouring insignificant PCa in 2613 patients who underwent radical prostatectomy for Gleason 3+3 PCa. We developed and validated a novel risk score to correctly identify insignificant PCa for use in unscreened patient cohorts.

Materials and Methods: Two thousand seven hundred an ninety nine patients who would have been candidates for AS (Gleason score 6 only) patients underwent robotic radical prostatectomy between 2006 and 2016 at a tertiary referral center. The volume and grade of tumour in the resected prostate was analysed. Inignificant PCa was defined as Gleason 3+3 only, index tumour volume <1.3 cm3, total tumour volume <2.5 cm3 (updated ERSPC definition). We computed the accuracy (specificity, sensitivity and area under the curve (AUC) of the receiver operator characteristic) of 9 predictive tools. Multivariate logistic regression with elastic net regularisation was used to develop a novel tool to predict insignificant prostate cancer using age at diagnosis, baseline PSA, TRUS volume, clinical T-stage, number of positive cores and percentage of positive cores as predictors. This tool was validated in an external cohort of 441 unscreened patients undergoing surgery for Gleason 6 PCa.

Results: All of the predefined tools rated poorly as predictors of insignificant disease as none of them reached the required AUC threshold of 0.7. The new tool performed well in training and validation cohorts.

Conclusion: Pre-existing predictive tools to identify indolent PCa have a poor predictive value when applied to an unscreened cohort of patients. Our novel tool shows good predictive power for insignificant PCa in this population in training and validation cohorts. The inherent selection bias due to analysis of a surgical cohort is acknowledged.

MP-10.02, Table 1.

	Training data	Validation data
N-Total	2799	441
N-insignificant PCa	1045	65
AUC (95% CI)	0.756 (0.737- 0.774)	0.757 (0.699- 0.815)

MP-10.03

Maximal Preservation of Intra-Pelvic Urethra Using Suture-Less Technique to Improve Early Continence after Radical Prostatectomy: 15 Years Experience

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Introduction and Objective: Early and late continence is the most important desire for patients under-going radical prostatectomy (RP). It has been tried to improve continence by decreasing the number of sutures to anastomose bladder neck to urethra. Our aim is to evaluate the effect of complete preservation of intra-pelvic urethra by sutureless technique to possibly achieve earlier and improved continence.

Materials and Methods: Eight hundred and two patients underwent radical prostatectomy by a single surgeon (N.S.). Data was collected prospectively. Bladder neck was spared when possible or repaired over a number 22F catheter (when large median lobe is present). Bladder neck was fixed to peri-urethral tissue with a 3-0 Polyglycolic acid suture at 12 or 9 o'clock position. Gentle traction was applied by Foley catheter balloon to oppose bladder neck to the urethra (suture-less vesico-urethral alignment).

Results: Average follow-up was 60 months. Average operation time was 80 minutes in open RP (666 cases) and 260 minutes in laparoscopic RP (136 cases). There was not any significant difference between open and laparoscopy group except that blood loss was less in laparoscopic group and operation time was much less in open group (the main reason to move from laparoscopy to open RP). Average hospitalization time was 2.5 days and 94.9% and 95.6% of patients were completely continent in 3 months and one year, respectively. Prolonged urinary leak occurred in 15 patients which were managed conservatively, except in 3 patients who underwent secondary bladder neck repair. Seventy six percent of patients in stage T3 underwent adjuvant radiation therapy. Sixteen percent of the patients underwent one urethral dilatation, 8% twice and less than 10% needed urethral dilatation. Internal urethrotomy was not done in any patient and no patient needed urethroplasty.

Conclusion: Complete preservation of intra- pelvic urethra by not putting suture on the urethra, brings excellent early and late urinary continence. Increased mild stricture is a price paid to prevent incontinence which is considered as social cancer. Radiation therapy and higher stage of the cancer increases the chance of stricture. Urinary leak is surprisingly minimal .Operation time and hospitalization is short.

MP-10.04

Survival Outcomes of Younger Men (<55 Years) Undergoing Radical Prostatectomy

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Introduction and Objective: To investigate the outcomes of patients <55 years of age in Victoria, Australia undergoing radical prostatectomy (RP) for prostate cancer.

Materials and Methods: Data on all men undergoing RP in Victoria between 1 January 2004 and 31 December 2014 were obtained from the Victorian Cancer Registry. Tumour characteristics including Gleason grade, stage of disease (based on final pathology specimen) and cause of death were also obtained. Statistical analysis was performed using Chi-squared test, Cox proportional hazards method and Kaplan-Meier analysis.

Results: Fourteen thousand six hundred and eighty six men underwent RP during the defined period. 109 of these were men were between 35-44 years and 1998 were between 45-54 years. Men aged between 35-44 years and 45-54 were compared against men between 55 and 74. Majority of men between the ages of 35 and 44 and 45 to 54 had higher rates of Gleason ≤7 disease compared with men between 55 and 74 (92.7% vs 86.8% vs 79.3%; p<0.01)) and ≤T2 disease (82.6% vs 75.6% vs 49.9%; p<0.01) but similar median PSA values. On a multivariate analysis adjusting for Gleason score, T stage and PSA, men between the ages of 45-54 had a 55.7% increase in overall survival compared to men between 55-74 years (HR 0.44 (95% CI 0.27 – 0.74; p<0.01) but these differences were not seen in the 35-44 age group. There were no differences in PC specific deaths between the groups. The 5- and 10-year overall survival were both higher for men aged 45-54 compared to 55-74 (97.9% vs 95.9% and 94.9% vs 85.3).

Conclusion: Men between 45-54 years undergoing RP had better overall survival compared to men between 55 and 74 but these effects were not seen in men between the ages of 35-44 years. There were no differences in prostate cancer specific survival in these groups.

MP-10.05

Oncologic and Functional Outcomes of Bilateral Nerve Sparing Robot-Assisted Radical Prostatectomy for High-Risk Prostate Cancer: A Propensity-Matched Analysis

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Introduction and Objective: Wide resection of neurovascular bundle has been recommended in men with high-risk prostate cancer (PCa). Little is known about the outcomes of bilateral nerve sparing (NS) in patients with high-risk PCa. In this study, we evaluated the oncologic and functional outcomes between bilateral NS and non-bilateral NS procedure, either unilateral NS or non-NS, during robot-assisted radical prostatectomy (RARP) in men with high-risk PCa.

Materials and Methods: One hundred twenty two men with high-risk PCa according to the D'Amico criteria were analyzed. A propensity score-matched analysis was performed to adjust treatment-related selection bias. The probability of biochemical recurrence-free survival (BCRFS), potency, and urinary continence between each NS group were compared using the Kaplan-Meier method. Multivariate Cox regression analyses were used to identify predictors of BCR.

Results: With a median follow-up of 30 months (interquartile range, 14.0-50.8 months), BCR occurred in 46 patients (37.7%). Although 84 men (68.8%) underwent bilateral NS RARP, pathologic outcomes were comparable to other RARP series in high-risk PCa: organ-confined disease in 49.2% and positive surgical margin rate in 34.4%. In the propensity-adjusted analyses, overall pathologic features were not significantly different between bilateral NS and non-bilateral NS groups. Favorable 5-year BCRFS was identified in bilateral NS group than non-bilateral NS group (41.1% vs. 23.4%, p = 0.019). On multivariate analysis, bilateral NS procedure was not increased with BCR (vs. non-bilateral NS; hazard ratio, 1.135; 95% confidence interval, 0.531-2.429; p = 0.744). Patients with bilateral NS showed better potency probability at 24-month than those with non-bilateral NS (61.0% vs. 24.8%, p = 0.025). In particular, the potency recovery became more pronounced in bilateral NS group with a preoperative Sexual Health Inventory for Men score ≥20 (84.2%). Men who underwent bilateral NS procedure had a trend for earlier control of urinary continence compared to the non-NS group (93.3% vs. 78.8%, p = 0.079).

Conclusion: Bilateral NS RARP can be performed to achieve adequate functional outcomes without compromising oncologic control in selected patients with high-risk PCa. Further studies are warranted to clarify the impact of the NS procedure in high-risk PCa patients who underwent RARP.

MP-10.06

Conditional Probability of Biochemical Recurrence-Free Survival and Cancer-Specific Mortality after Radical Prostatectomy at Long Term Follow-Up

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Introduction and Objectives: To estimate the conditional probability of biochemical recurrence (BCR) free survival and cancer-specific mortality (CSM) for men with clinically localized prostate cancer (PCa) treated with radical prostatectomy (RP).

Materials and Methods: The study population consisted of 3576 consecutive patients who underwent laparoscopic radical prostatectomy (LARP) and 2619 men treated with robotic radical prostatectomy (RARP) in the last 15 years at our institution. BCR was defined as serum PSA³0,2 ng/dl. Prostate cancer death was defined as patients who died with metastasis in an androgen independent setting. Kaplan Meier method was used to estimate BCR and CSM conditional probabilities. Multivariable Cox regression analysis was used to estimate predictors of CSM.

Results: The median follow-up was 8, 49 years (IQR 4.01-12.97). Positive surgical margins (PSM) were identified in 1202 patients (19.4%); of these, 664 (55.24%) had organ confined disease and 523 (43.51%) had extraprostatic extension (EPE). Seminal vesicle invasion was detected in 448 men (7.23%). BCR-free survival rate was significantly higher with the robotic approach (83% vs 77% for laparoscopic surgery at 10 years; p<0,001) in univariate analysis. For patients with PSA < 10 ng/dl BCR-free survival at 10 years was 80% vs 64% for PSA 10-20 ng/dl, and 59% for PSA >20ng/dl; p>0.001. Negative margins, Gleason <=6 and no extracapsular extension in the specimen were found to have higher BCR free survival (all p< 0,001). The conditional probability of BCR after surgery 1st year is 6.7%. Those who reach the 2nd year of surgery without recurrence have a relapse probability of 4%, (cumulative probability of 9.8%) That probability falls to 3.5% after the 3rd year (cumulative probability 13%), 2% after the 4th year (cumulative probability of 15%) and is 2.1% after the 5th year (cumulative probability 17%). After 10 years of follow-up without recurrence, the subsequent probability of relapse is 0.8%, (cumulative probability 21%). A total of 92 (1.48%) patients (80 LARP and 12 RARP) died of disease. Among patients with BCR, those who recur within the first three years of follow-up had higher CSM (9% vs 4% for BCR after 3 years; p 0.04).

Conclusions: We found a 50% decrease in BCR probability in patients who had not recurred with the first 3 years. Similar drop was identified for CSM. This is not only useful for patients counseling but also to optimize postoperative follow-up strategies.

MP-10.07

Prospective Comparative Analysis of Oncologic and Functional Outcomes between Focal Therapy and Robotic Radical Prostatectomy

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Introduction and Objective: The aim is to compare the oncological, functional and morbidity outcomes after focal therapy (FT) and robotic radical prostatectomy (RARP).

Materials and Methods: From July 2009 to September 2015 a total of 1883 patients underwent RARP and 373 FT. Of those, we selected 1410 men (1222 RARP and 236 FT) according to the NCCN PCa risk classification: 402 (27.5%), 388 (26.6%) and 668 (45.8%) patients were very low risk, low risk and intermediate risk, respectively. Within FT, 188 men underwent focal high-intensity focused ultrasound (HIFU) and 48 cryotherapies. Oncologic outcomes were analyzed in terms of biochemical recurrence (BCR) free sur-

vival (using Phoenix definition for FT, and PSA ³0.2 ng/dl in RARP), and the need for further treatment. FT failure was defined as positive control biopsy after treatment. Overall suvival and metástasis-free survival were estimated using Cox regression and Kaplan-Meier methods. Complications were graded as Clavien-Dindo classification. Functional outcomes were assessed with validated questionnaries for genitourinary symptoms and sexual function.

Results: Median follow-up was 45.4 mo (IQR: 25.3-65.5). BCR free survival was comparable among RARP and FT (10.6% for RARP vs 9% FT; HR 1.09; p 0.69). Patients with intermediate risk PCa were significantly associated with BCR (HR 8.47; p< 0.001). Failure in FT was observed in 61(25.8%) cases. No differences were found in overall survival, neither mestastases-free survival between both treatments; (p 0.85 and p 0.142, respectively). FT was associated with higher risk of additional treatments (HR 5.21; p <0.001). A significant difference was found in terms of complications between treatments, having FT superior rates (15.3% vs 9% for RARP; HR 1.82; p 0.004). Complications included 5.5% Clavien-Dindo grade 1, 70.8% grade 2 events, 21.5% grade 3 and 1.3% grade 4 events. RARP was associated with less continence recovery vs FT at 3, 6 and 12 months after surgery (p <0.001). Potency is higher between men treated by FT at 3, 6 and 12 mo (

Conclusions: For selected patients with organ confined PCa, RARP and FT offered comparable oncological control with FT requiring higher additional treatments. Potency and continency appears to be better preserved in patients treated with FT.

MP-10.08

Age as Independent Predictor of Biochemical Recurrence and Cancer-Specific Survival in Prostate Cancer Patients

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Introduction and Objective: The marked increase in life expectancy calls for further investigation about oncologic outcomes in elderly patients with prostate cancer (PCa) and ≥70 years old, treated with minimal invasive radical prostatectomy (MIRP). The aim was to analyze the effect of advanced age (≥70 years) on PCa oncological outcomes.

Materials and Methods: We analyzed 6180 patients who were treated with MIRP from 2000 to 2016. Of those 573 (9.27%) men aged ≥70 years old and 5607 (90.72%) patients were younger. Multivariate Cox regression and Kaplan-Meier methods were used to estimate the impact of age on biochemical recurrence-free, metastasis-free and cancer specific survival.

Results: Median follow-up was 107.7 months (IQR 25.6-189.4). Patients aged ≥70 years old had higher pathological Gleason score (p<0.001) and were more likely to harbor extracapsular extension (p<0.001), and had higher pathological stage (p<0.001). No differences were found in terms of positive surgical margins (p 0.12) and positive lymph nodes (0.321). On multivariable analysis age ≥ 70 years was associated with worse biochemical recurrence (BCR) free survival (HR 1.3; 95% CI 1.0-1.5; p 0.003). There was not a significant association between age ≥ 70 years and metastasis free survival (HR 1.2; 95% CI 0.5-2.5; p 0.6). Cancer specific mortality (CSM) was associated with men aged ≥70 years (HR 2.1; 95% CI 1.3-3.3; p 0.002). Ten-year BCR-free, metastasis-free and cancer specific survival (CSS) rates were 72.4%, 97.7%, 99.4% in patients ≥70 years old, and 79.4%, 98.7%, and 99.7%, respectively, in patients younger than 70 years. At 15-year CSS was 95.9 % for men aged <70 years and 88.4 % for patients ≥70 years old. Conclusions: Patients with ≥70 years had more advanced PCa, with higher Gleason and pathological stage. Age is an independent predictor of worse BCR-free and CSS.

MP-10.09

Lateral Bladder Neck Dissection Technique and Triple-Layer Posterior Bladder Wall Reconstruction Lead to Early Removal of Foley Catheter and Improved Urinary Continence after Robotic-Assisted Radical Prostatectomy

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Introduction and Objectives: A variety of surgical techniques have been employed in an attempt to improve early return of continence after robotic-assisted radical prostatectomy (RARP). To evaluate the influence of lateral bladder neck dissection technique (LBND) and triple-layer posterior bladder wall reconstruction (TPWR) on the early removal of Foley catheter and urinary continence after RARP.

Materials and Methods: Total of 485 patients with localized prostate cancer underwent RALP, with 187 men undergoing standard bladder neck dissection with Ven velthoven continuous suturing (group 1) and 298 men undergoing LBND with TPWR and Ven velthoven continuous suturing (group 2). Pre- and postoperative urinary function and continence recovery were evaluated and compared between the two groups.

Results: The overall positive margin rate was lower in group 2 with 11.2% and 15.6% for group 1 (p=0.045). Early removal of Foley catheter less than at POD 7th was seen in 73.8% in group 2 whereas only 16.2 % was seen in group 1. Postoperative continence was evaluated by EPIC short form questionnaire. At POD 1 and 6 months, the mean urinary function scores were higher in group 2 compared to group 1 with statistical significance (p=0.031 at 1month, p=0.043 at 6 months). Group 2 showed significantly higher continence rates at 1 and 6 months post-RALP than group 1. In group 2, the recovery of continence approached to 87.2% at postoperative 6 months showing early return of continence.

Conclusions: Early removal of Foley catheter with improved postoperative continence and urinary functions after RALP can be achieved by lateral bladder neck dissection technique and triple-layer posterior bladder wall reconstruction with Ven velthoven continous suturing.

MP-10.10

Safety and Efficacy of Low-Dose-Rate Brachytherapy for Localized Prostate Cancer in Elderly Patients

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Introduction and Objective: This study evaluated safety and efficacy of low-dose-rate I125 permanent-implant prostate brachytherapy (LDR-PBT) in patients over 75 years in comparison with those under 74 years.

Materials and Methods: Between July 2004 and September 2016, 586 patients, including 88 over 75 years and 498 under 74 years patients, received LDR-PBT at our institution and were followed up for at least 2 years. Prostate Specific Antigen (PSA), International Prostate Symptom Scores (IPSS) and QOL Scores were assessed pre-implant as well as at 1, 3, and 6 months after seed implantation, and every 6 months thereafter. Rectal toxicities were evaluated using the National Cancer Institute's Common Terminology Criteria for Adverse Events, version. 3.0.

Results: According to American Society for Therapeutic Radiology and Oncology (ASTRO) definition of biochemical failure (BF), BF rates of patients over 75 years were equivalent to those under 74 years (4.5% vs 4.2% p=0.81). The post-implant IPSS peaked 1 month after seed implantation and gradually returned to a baseline score after 1 year, and there were no significant differences between two groups (p=0.241). We experienced 1 case (1.1%) of acute urinary retention in patients over 75 years and 12 cases (2.4%) in those under 74 years (p=0.52). Rectal toxicity was not observed in patients over 75 years while 6 cases were observed in those under 74 years (p=0.15). Over a median follow-up period of 78 months (range, 25-144), overall survival rate (OS) at 5 years was 95.4% in patients over 75 years and 94.6% in those under 74 years. Biochemical disease free survival (bDFS) at 5 years was 100% in patients over 75 years and 99.0% in those under 74 years.

Conclusion: Our data suggest that LDR-PBT is one of the effective and safe therapies for clinically localized prostate cancer not only in patients under 74 years but also in those over 75 years.

MP-10.11

Observation of Preliminary Clinical Effect and Analysis of Perioperative Complications of Radical Prostatectomy for Patients with Oligo-Metastatic Prostate Cancer

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Introduction and Objective: It has been demonstrated that radical prostatectomy for patients with oligo-metastatic prostate cancer may contribute to improve local control of prostate cancer and overall survival by several retrospective studies; perioperative

MP-10.12, Table 1. Cox Proportional Hazards Model for Biochemical Failure (after Multiple Imputation)

Determinant	Univariable, HR (95% CI)	p-value	Multivariable, HR (95% CI)	Multivariable, corrected for optimism (95%CI)	p-value	Contribution to risk score
Neoadjuvant ADT	1.56 (0.95-2.54)	0.08	NS	NS	NS	NS
Age at cryo	0.995 (0.96-1.03)	0.80	1.02 (0.99-1.06)	1.02 (0.99-1.05)	0.23	0.24 (*Age)
PSA	1.09 (1.06-1.13)	<0.0001	1.08 (1.05-1.12)	1.06 (1.04-1.08)	<0.0001	0.81 (*PSA)
Gleason (ref.=2-6)						
Gleason 7	1.96 (1.02-3.75)	0.04	1.75 (0.90-3.38)	1.49 (0.93-2.39)	0.10	5.58 (*1 if Gl7)
Gleason 8-10	2.05 (1.05-4.00)	0.036	1.52 (0.78-2.98)	1.35 (0.84-2.18)	0.22	4.21 (*1 if Gl 8-10)
PSA nadir	1.11 (1.08-1.15)	<0.0001	1.11 (1.07-1.15)	1.08 (1.05-1.10)	<0.0001	0.17 (*PSA nadir)

complications play an important role to determine whether radical prostatectomy is appropriate for patients with oligo-metastatic prostate cancer.

Materials and Methods: A total number of 247 patients received radical prostatectomy were recruited in the study from July 2015 to January 2016, including 25 patients with oligo-metastatic prostate cancer and 222 patients with localized prostate cancer. Patients with perioperative complications in both groups were graded with the Clavien-Dindo grading system. The proportion of PSA decline and the rates and severity of perioperative complications were analyzed in both groups.

Results: The cases of PSA decline in the oligo-metastatic group were 21(84.0%), lower than the localized group with 212 cases (95.5%). There were 6 cases (24.0%) with postoperative complications in the oligo-metastatic group, including serious complications (III or above) 1 case (4.0%), and 49 cases (22.1%) with postoperative complications in the localized group, including serious complications (III or above) 7 case (3.2%), the differences in both groups reached no statistical significance (P>0.05).

Conclusion: Radical prostatectomy for patients with oligo-metastatic prostate cancer could be safe, effective, and appropriate the risk of perioperative complications should not be one of the limiting factors.

MP-10.12

Biochemical Recurrence after Whole-Gland Salvage Cryosurgery at 10 Years Follow-Up: Multivariate Model and Risk Score

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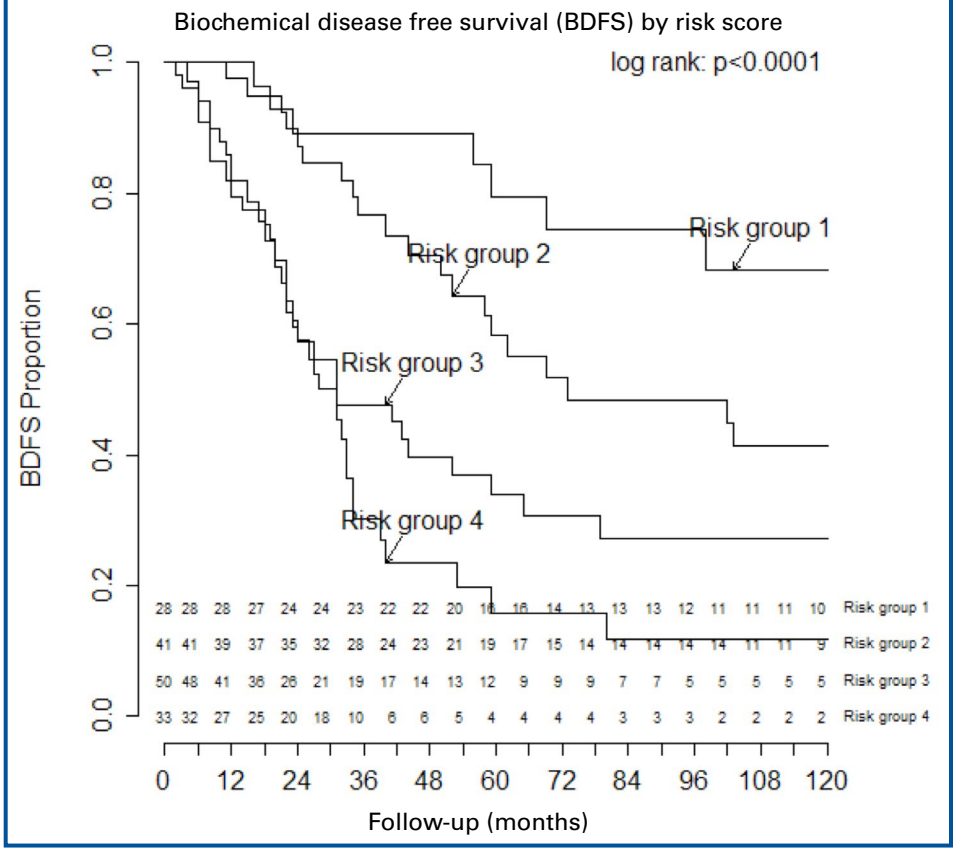
Introduction and Objective: Whole-gland salvage cryosurgery (SCS) is a potentially curative management option for organ-confined radio-recurrent prostate cancer (PCa). A prediction model for biochemical failure (BF) in order to improve patient selection and follow-up was constructed.

MP-10.12, Figure 1. Biochemical Recurrence Free Survival Stratified by Four Risk Groups



Materials and Methods: One hundred and fifty two patients with biopsy-proven, clinically localised radio-recurrent disease were treated between 1995 and 2004 with salvage SCS at one centre. Cox regression was adopted to assess the influence of clinical characteristics on BF. Missing data were imputed 20 times. Factors with p-value≤0.25 were left in the model, with internal validation using bootstrap resampling (500 times). C-statistic and hazard ratios were adjusted for optimism. Calibration at different time points was performed and risk score created to assess different prognostic groups.

Results: Eighty nine, out of one hundred and fifty two patients, experienced BF according to the Phoenix-definition (PSA-nadir+2 ng/ml). Median follow-up was 117 months (interquartile range 56-154). Five- and ten-year biochemical disease-free survival (BDFS) was 45% and 35%, while metastasis-free survival was 86% and 71%, respectively. Age at SCS, pre-salvage PSA, Gleason score and PSA-nadir post-treatment were associated with BF after multivariable regression, adjusted C-statistic 0.76. The model was well calibrated up to 10 years. Four risk groups were created (score <22, 22-25, 25-30 and >30, see table 1). BDFS estimates at ten years were 68%, 41%, 27% and 12%, respectively (log-rank p<0.0001).

Conclusion: Selection of salvage patients is difficult, since there is little guidance from literature regarding prognostic value of various clinical characteristics. This model can guide patient selection and follow-up. Lack of external validation might limit applicability for other centres performing SCS.

MP-10.13

Impact of Tumor Volume Percentage to Prostate Volume on the Risk of Biochemical Recurrence after Radical Prostatectomy

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Introduction and Objective: Tumor volume and prostate volume have not been proven to have significant value to predict biochemical recurrence (BCR) in patients with prostate cancer (PCa). We aimed at evaluating the association of the tumor volume percentage to prostate volume (TVP) after radical prostatectomy (RP) with more aggressive disease characteristics.

Materials and Methods: Overall, 1,601 patients with PCa who underwent RP after January 2006 and who had follow-up period longer than 6 months were identified. All patients had available preoperative and pathological data. Multivariable Cox regression test was applied to analyze the association between TVP (as continuous variable) and the risk of BCR following RP within overall patients, and within patients' group stratified by the D'Amico risk groups (low- vs. intermediate- vs. high-risk).

Results: Mean patient age was 65.9 years (median: 67). Mean TVP was 19.6% (median: 10). Overall, 530 (33.1%), 594 (37.1%), and 477 (29.8%) patients had low-, intermediate-, and high-risk PCa, respectively, and mean TVP was 7.57%, 23.4%, and 28.3% in patients with low-, intermediate-, and high-risk PCa, respectively. At a median follow-up of 46 months, 330 patients (20.6%) suffered BCR. There was no linear correlation between TVP and prostate size (p= 0.920). In univariate analysis, TVP was associated with higher risk of BCR (HR 1.045, 95% CI 1.005-1.087, p= 0.028) among entire patients. When patients were stratified according to D'Amico risk groups, TVP represented an independent predictor of BCR only in patients with high-risk disease (HR 9.817, 95% CI 6.021-16.006, p< 0.001). However, in the multivariable model within high-risk patients, TVP did not predict BCR significantly (p= 0.771). Instead, tumor volume (cc) was a significant predictor of BCR in high-risk patients with pathological T stage ≥T3 (p= 0.024).

Conclusions: Increased TVP appears to be a characteristic of aggressive prostate tumors, although it did not predict BCR in the present study. However, these data support the association between tumor volume and BCR after RP in high-risk patients with pathological T stage ≥T3.

MP-10.14

Pair-Matched Patient-reported Quality of Life following Focal Irreversible Electroporation versus Robot-Assisted Radical Prostatectomy

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Introduction and Objective: To compare patient-reported quality of life following focal irreversible electroporation (IRE) versus robot-assisted radical prostatectomy (RARP) in matched groups for localized prostate cancer (PCa).

Materials and Methods: Patients with significant PCa (high-volume Gleason 6 or 7) that received primary unifocal IRE were 1:1 propensity score nearest neighbour pair-matched to patients that received expert nerve-sparing RARP. Matching was performed on age, pre-treatment prostate-specific antigen (PSA), ISUP score and number of positive cores on biopsy, baseline genito-urinary function and quality of life (QoL). Patient-reported outcomes were prospectively assessed using the Expanded Prostate Cancer Index Composite (EPIC), AUA symptom score and Short Form of Health Survey (SF-12) with Physical and Mental Component at baseline, 1.5, 3, 6 and 12 months. Primary analysis evaluated the rates of preserved pad-free urinary continence (UC) and erections sufficient for intercourse (ESI). Secondary analysis included all remaining genito-urinary function and QoL outcomes. The Mann-Whitney U and Chi-square test was to assess QoL outcome differences per evaluation moment.

Results: Fifty patients treated with IRE (February 2013 – July 2016) were matched to 50 RARP patients (April 2013 – July 2016, potential candidates n= 325) without significant matching-criteria differences. IRE was significantly superior to RARP at 1.5, 3, 6 months in preserving UC and ESI. The absolute differences were 44%, 22%, 11% and 14% for UC and 34%, 46%, 27% and 25% for ESI at 1.5, 3, 6 and 12 months, respectively. At 12 months the absolute difference for UC and ESI was not significant due to the low response rate. All EPIC summary scores did not show any statistically significant difference at 1.5, 3, 6 and 12 months, except for sexual summary score at 6 months. IRE patients had a higher AUA symptom score at 1.5, 3 and 6 months. At 12 months this improved to a lower score than pre-IRE. RARP patients showed more physical complaints after surgery at 6 weeks on the SF-12 survey.

Conclusions: Short-term preservation of urinary continence and erectile function is superior with IRE compared to RARP. International registries may provide longer follow-up to establish the oncological outcomes following IRE versus RARP.

MP-10.15

Active Surveillance with Delayed Radical Prostatectomy versus Immediate Radical Prostatectomy for Low Risk Prostate Cancer in Korean

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Introduction and Objective: In recent years, the comparative studies for low risk prostate cancer patients with delayed radical prostatectomy after active surveillance (DRPAS) or immediate radical prostatectomy (IRP) has been reported, but it has been reported rarely in Korea. Therefore, we compared the unfavorable disease risk following DRPAS and IRP.

Materials and Methods: Of patients treated with radical prostatectomy from January 2011 to May 2016, the patients with low risk prostate cancer by transrectal ultrasonography biopsy (TRUS-Bx.) were retrospectively analyzed according to National Comprehensive Cancer Network criteria (PSA <10ng/mL, Gleason score ≤6, and Clinical stage ≤T2a). These patients with low risk prostate cancer were divided into DRPAS group and IRP group. For these two groups, we compared unfavorable pathologic features (primary Gleason pattern ≥4, extracapsular extension (ECE), seminal vesicle invasion (SVI)) after radical prostatectomy.

Results: Of 351 patients with radical prostatectomy, 71 patients (20.2%) had low risk prostate cancer by TRUS-Bx.. Of these, 16 were in DRPAS group and 55 were in IRP group. Delayed radical prostatectomy occurred at a median of 24.2 months (range: 13-60) after diagnosis. DRPAS group and IRP group demonstrated similar proportions of patients with primary Gleason pattern ≥4 (6.3% vs 14.5%; p=0.673), ECE (12.5% vs 12.7%; p=1.000), SVI (0% vs 1.8%; p=1.000), and overall unfavorable pathologic features (12.5% vs 21.8%; p=0.501).

Conclusion: In Korean with low risk prostate cancer, DRPAS and IRP showed similar outcomes of unfavorable disease risk. Although our study includes a small number of patients, we suggest that active surveillance is not associated with unfavorable pathologic outcomes compared to immediate radical prostatectomy.

MP-10.16

Predictors of Disease Upstaging/ Upgrading in Men with Low Risk Prostate Cancer Who Are Potential Candidates for Active Surveillance

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Introduction and Objective: PSA screening has led to an increased detection of indolent cancers which are unlikely to cause any clinical symptoms during a patient lifetime. In order to avoid or delay the adverse events and morbidities associated with prostate cancer treatment, active surveillance (AS) has been introduced. However much controversy exists regarding optimal inclusion criteria. Epstein Criteria is the

most widely used scheme for this purpose. Nevertheless it may underestimate the true nature of prostate cancer in some patients. We conducted this study to determine predictors of adverse pathology and initial reclassification among potential candidates of AS who elected to undergo radical prostatectomy (RP).

Materials and Methods: Study population consisted of 231 patients with indolent prostate cancer based on Epstein criteria who underwent RP. Data were retrieved from our patient consented and institutional review board approved cancer Registry. Men with pathologic stage > pT2 were considered as having upstaged disease. Upgraded disease was also defined base on the presence of Gleason pattern 4 and/or Gleason score≥7 in RP specimen. Logistic regression analysis was employed to examine different variables associated with initial reclassification, defined as upstaged and/or upgraded disease in RP specimens.

Results: A total of 231 men with a mean age of 66.3±8.2 and indolent prostate cancer based on Epstein criteria were considered for analysis in the present study. Postoperative upstaging and upgrading were noted in 21 (9.1%) and 18 (7.8%) patients respectively. Logistic regression analysis showed that chronic inflammation at initial biopsy (OR 1.27 [95% CI 0.017-0.978], p=0.027), and presence of hypoechoic lesion on preoperative transrectal ultrasonography (OR 2.824 [95% CI 1.125-7.091], p=0.048) were independently associated with the risk of initial reclassification and adverse pathology in RP specimens. Perineural invasion was reported in 41 (17.7%) biopsy specimens and was not associated with disease reclassification.

Conclusions: Presence of hypoechoic lesion on preoperative ultrasonography warrants higher likelihood of disease reclassification in patients on AS. However, presence of chronic inflammation at initial biopsy is associated with a significant decrease in the risk of disease reclassification. These factors might be of value in determining follow up strategy in patients on AS.

MP-10.17

The Prognostic Impact of Downgrading and Upgrading from Biopsy to Radical Prostatectomy in a Contemporary Grading System for Prostate Cancer

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Introduction and Objective: Recently, a new prostate cancer (PC) grading system has been introduced, where Gleason score (GS) 7(3+4) and GS 7(4+3) are categorized into grade group (GG) 2 and 3, respectively. However, whether downgrading and upgrading from needle biopsy (NB) to radical prostatectomy (RP) affects oncologic outcomes is currently unknown. Here, we investigated the prognostic impact of downgrading and upgrading from biopsy to radical prostatectomy in the new classification.

Materials and Methods: We retrospectively reviewed the medical records of 3253 patients with localized (pT2–3N0M0) PC who underwent RP at our institution between 1995 and 2014. We identified 739 patients with GS 7 PC on both NB and RP specimens. After exclusion of patients who had received neoadjuvant or adjuvant treatment (i.e., radiation, androgen deprivation therapy, or both) and those with incomplete pathological or follow-up data, 692 men were included in the final analysis. We analyzed data using Kaplan-Meier methods with log-rank tests and multivariate Cox regression models.

Results: Of the 692 patients enrolled in this study, 264 (38.1%), 125 (18.1%), 142 (20.5%), and 161 (23.3%) patients were classified as group 1 (NB and RP GG2), group 2 (NB GG3 downgraded to RP GG 2), group 3 (NB GG2 upgraded to RP GG3), and group 4 (NB and RP GG3), respectively. Kaplan-Meier curves showed significant differences in biochemical recurrence (BCR)-free survival across the groups (Log-rank test, p <0.001). In multivariate Cox regression analyses, these groups were significantly associated with BCR (group 2: HR 1.675, p = 0.026; group 3: HR 1.908, p = 0.002; and group 4: HR 2.699, p <0.001).

Conclusion: Downgrading and upgrading from NB to RP was an independent predictor of BCR, and could be due to the amount of Gleason pattern 4.

MP-10.18

First Experience of Focal HIFU for Prostate Cancer in a DGH with One Year Follow-Up: Can We Reproduce Results from Tertiary Centres?

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Introduction and Objective: Focal therapy with high intensity focused ultrasound (HIFU) is increasingly popular with positive oncological and functional outcomes seen at large research hospitals. This study aims to assess whether these results can be successfully reproduced in a district general hospital (DGH) setting.

Materials and Methods: All patients undergoing HIFU at the Princess Alexandra Hospital, Harlow, UK between 01.02.2015-01.02.2016 were prospectively included. The primary outcome was absence of prostate cancer at 1 year MRI. Secondary outcomes were biochemical response, adverse events, continence, lower urinary tract symptoms (IPSS score), erectile function (IIEF score) and quality of life (QOL).

Results: Thirty one patients were treated (mean age 70.4years [SD=5.8]). Mean PSA was 9.0ng/ml [SD 4.8]. Gleason 3+3, 3+4 and 4+3 was found in 8 (25.8%), 18 (58.1%) and 5 (16.1%) patients respectively. Mean PSA nadir was 2.3ng/ml [SD=1.6], while mean PSA at 1 year was 3.3ng/ml [SD=2.6]. MRI was performed in 28 patients at 1 year, with 5 (17.9%) recurrences, who all had repeat HIFU. At 6 weeks post-operation continence was 100% and there were no statistically significant change in IPSS, IIEF or QOL. There was one Clavien 3a complication.

Conclusion: This initial experience of HIFU in a DGH setting suggests that results comparable to those published by large tertiary centres are achievable in terms of oncological and functional results.

MP-10.19

Pelvic Lymphadenectomy and Radical Prostatectomy in the Elderly: Inverse Trends Observed in Australian Population Data

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Introduction and Objective: Increased utilization of active surveillance for indolent prostate cancer and radical prostatectomy (RP) with/without pelvic lymphadenectomy (PLND) for high risk, locally advanced disease are evolutions in surgical patterns of prostate cancer care. We sought to describe surgical patterns of care for prostate cancer in Australia.

Materials and Methods: Publicly accessible Medicare claims data using item numbers for RP and RP with PLND were accessed for the period 2005-2015 and described per 100,000 (105) men aged 45-84years. Overall, age-related and geographical trends were analysed.

Results: Total RPs performed peaked in 2009 (164.6/105 men) with a subsequent decrease until 2015 (131.9/105 men), driven by reduced RPs in younger men. Men aged 55-64 years (255.5/105 to 155.5/105) and 45-54 years (59.7/105 to 29.1/105) displayed the greatest reduction. RP among men aged 75-84 years increased after 2009 (34.4/105 to 77.1/105). Similar trends were observed individually for RP and RP with PLND. RP alone was more common in men <65 years and RP with PLND more common in men aged ≥65. When a PLND: noPLND ratio was calculated, PLND use reduced from 2005-2015 (overall 1.8 to 1.06). Greatest reductions in the use of PLND were observed for NSW (3.9 to 2.1) and QLD (1.6 to 0.5), while an increase was observed in SA (0.6 to 1.2).

Conclusions: Currently, RP is performed less in younger men and more in older men. PLND at the time of RP is performed less commonly nationwide, except in South Australia. Medicare claims registry data describes evolution in surgical patterns of care for prostate cancer in Australia.

Moderated ePosters Session 11
Trauma, Upper Tract, Fistula and Genital Reconstruction

Sunday, October 22
1415–1545

MP-11.01

Home and Away: A Comparison of Renal Trauma and Its Management in Two Major Trauma Centres in London and Adelaide

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Introduction and Objective: Trauma is a major source of morbidity and mortality and should be managed by a dedicated trauma team. The kidney is affected in 1-5% of all traumas, thereby representing a significant urological workload in trauma centres. We wanted to compare the pattern of trauma, severity of injury and management at two different trauma centres in two different continents.

Materials and Methods: Eight years of renal trauma data was compared between two major trauma centres: London 2009-2016, Adelaide 2004-2012.

Results: One hundred and nineteen patients were analysed from London, 89% male (n=106), average age 32 years; compared to 180 patients from Adelaide, 86% male (n=154), average age 37 years. The commonest cause of trauma in London was assault (37%, n=44); but in Adelaide assault accounted for 10% (n=18) of trauma patients. The comment cause of trauma in Adelaide was being in a motor vehicle accident (36%, n=65), (excluding motorbikes but including pedestrian vs vehicle), compared to London which accounted for 18% (n=22) of trauma mechanism. Motorbike related trauma accounted for 25% (n=42) in Adelaide compared to 13% (n=15) in London. Sporting injury as the cause of renal trauma was similar; 13% (n=16) in London compared to 14% (n=26) in Adelaide. Mechanism of injury in female and male trauma was different. Both centres had isolated renal trauma in 25% of cases. 13% of patients had embolisation in London (grade 2-4), compared to 5% in Adelaide (all grade 4-5); however Adelaide had a higher laparotomy rate of 1:5 compared to London 1:10. The grade 5 injury rate was similar, but London had predominately grade 3-4 injuries (33 and 38% respectively), whereas Adelaide had similar proportion of grade 1-4 injuries.

Conclusion: Renal trauma patterns vary which leads to interesting comparisons including their management e.g. embolisation vs laparotomy. Standardised renal grading allows for international learning.

MP-11.02

Posttraumatic Urethral Stricture or Loss with Pelvic Fracture in Girls: How to Appropriate Management

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Introduction and Objective: Urethral injury in girls accompanying fracture of the pelvis is rare and difficulty for treatment. We present our experience with 20 complex cases and to determine appropriate management.

Materials and Methods: Between Janury 2009 and December 2015, a total of 20 girls, mean age 9.5 years (range 3~14 years), of posttraumatic urethral stricture associated with urethrovaginal fistula were treated using a variety of procedures. A large hydrocolpos of proximal vagina because of severe stenosis of the distant vagina was in 6 girls.

Results: Of the 20 girls, 16 had undergone suprapubic cystostomy as initial treatment, whereas in 6 primary repairs had failed. Urethral reconstruction using a bladder flap tube was performed in 5 girls with total urethral loss, labial pedicle flap or vulvar flap urethroplasty in 11, vaginal flap urethroplasty in 4. Supplementary procedures were performed in 6 patients with severe stricture of distant vagina during urethroplasty, including colpoplasty using island vulvar skin flaps in 3 patients, enlargement of the distant vagina using severe hydrocolpos in proximal vagina in 3 patients. The overall anatomical success rate was 90% (18 of 20 cases). The functional success rate was 75% (15 of 20).

Conclusions: The treatment of posttraumatic urethral injury accompanying pelvic fracture in girls is difficulty. Surgical procedures for treating urethral strictures or loss with urethrovaginal fistulas in girls should be based on fistula location, stricture length and vaginal anatomy.

MP-11.03

Pelvic Fracture Urethral Injury – The Nature of the Causative Injury Correlates Strongly with Surgical Treatment and Outcome

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Introduction/Objective: We have assessed the specific nature of the trauma leading to pelvic ring disruption and its relationship to the resulting urethral injury, its surgical treatment and outcome.

Materials and Methods: One hundred and six consecutive patients with pelvic fracture urethral injuries who had no previous open repair and had assessable pelvic CT scans and urethrography at the time of injury, and a minimum two years follow-up was evaluated. Sixty six patients (62%) were involved in a road traffic accident (n=33 driver\passenger in a car), 38 (36%) in work\recreational activities. Two patients (2%) attempted suicide by jumping.

Results: Of the 33 car occupants in RTA, 27 were lateral compression (LC) injuries and 4 were open-book (OB). Of the 33 pedestrians/cyclists,16 were LC, 12 were OB and 4 were vertical shear disruptions (VS). Of the work/recreational group, 23 were LC, 11 were OB and 4 were VS. The remaining 4 patients were unclassifiable in this simple way. Of the 69 lateral compression fractures, 34 followed non-crush while 22 followed crush-type injuries. The other 13 were not easily classifiable. Of the 34 non-crush injuries: 30 were car injuries, 2 were pedestrians and 2 were work injuries. Of the 22 crush injuries: 1 was a car injury, 18 were pedestrian injuries and 3 were work injuries. The surgery in these patients was step 1 – mobilisation and anastomosis – in 7%, step 2 – crural separation – in 52.5%, step 3 – inferior pubectomy – in 15%; and step 4 – supra-crural re-routing – in 17.5%. Other procedures were used in 8%. The success rate of surgery deteriorated from 95% for step 1 to 84% for Step 4 with each successive step. Sixty percent of the step 3 cases and 67% of the step 4 patients were crush injuries.

Conclusion: Car drivers and passengers tended to have less serious injuries and better outcome mainly because LC fractures seemed to cause less local pelvic trauma and were associated with shorter defects to bridge. Specifically there was an 88% chance that the injury would be a non-crush LC injury causing an incomplete rupture with a 92% chance that it can be treated by a step 1 or step 2 BPA.

MP-11.04

Failed Multiple Posterior Urethroplasties for Pelvic Fracture-related Urethral Injuries: Findings and Treatment Options

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Introduction and Objectives: Posterior urethral distraction defects are severe injuries and associated with 10% of pelvic fractures. Primary repair of pelvic fracture urethral injuries (PFUI) has a high success rate in hands of experienced surgeons. While redo anastomotic urethroplasty after failed primary repair is usually surgically feasible with still high success rate, a second or more failure of posterior urethroplasty for PFUI is expected to be difficult and technically demanding. Findings, treatment options and outcomes for those cases are discussed in this study.

Materials and Methods: We have retrospectively reviewed all patients with PFUI and failed 2 or more urethroplasties referred to our center from 2012 to 2016. Preoperative work up included retrograde urethrography, micturiting cystourethrography, penile Doppler, urine analysis and culture. 3-D computed tomography for the bony pelvis and magnetic resonance urethrography were done in selected cases. Failure of surgery was considered with decreased urine flow, radiological evidence of recurrent stricture and/or need for further surgery or instrumentation

Results: Out of 61 patients with 2 or more failed urethroplasties included in our study, 56 patients had complete follow up regarding urinary flow and urethral patency. They had age range from 12 to 61 years with a mean of 30.5 years and stricture/gap length from 1 to 10 cm with a mean of 4.85 cm. Fol-

low up period extended from 6 to 48 months. Three main findings were found: inadequate mobilization of bulbar urethra, incomplete scar excision and need for inferior pubecomy. In addition, bulbar shortening including bulbar necrosis was found in 23.2% of the cases, a percentage higher than that found in primary or one redo cases. Operative procedures done included 4 different procedures; anastomotic urethroplasty (n=37), substitution urethroplasty (n=13), diverticulectomy (n=4) and LASER urethrotomy (n=2). The overall success rate was 79 %, similar to our success rates of primary and one redo cases.

Conclusions: PFUI with failed 2 or more urethroplasties are more commonly associated with bulbar shortening that requires circumferential urethral substitution. Redo posterior urethroplasty should be always done by expert reconstructive urologists in tertiary centers to achieve high success rates for such complicated cases.

MP-11.05

Proper Anatomical Anastomotic Urethroplasty Is Required for Restoration of Normal Physiology: Lesson from Pelvic Fracture Urethral Injuries

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Introduction and Objective: Incorrect Open or endoscopic surgeries for pelvic fracture urethral injuries (PFUI) can lead to false pathway away from the normal semen and urine passages. It can result in urinary incontinence and/or ejaculatory disorder. Herein, we report four referred cases of operated PFUI in whom previous surgery created abnormal track for urine, away from prostatic urethra. We discussed the diagnosis, scheme of management and value of restoring the normal anatomy.

Materials and Methods: This report included 4 patients who suffered PFUI. They had previous attempts of perineal urethroplasty in 2 cases and multiple endoscopic treatments in the other 2 cases. All patients presented with urinary incontinence, pain on ejaculation and poor urine flow. Preoperative evaluation included retrograde urethrography, micturiting urethrogarphy, urethrocystoscopy and magnetic resonance urethrography to identify the false pathway and plan curative urethroplasty to attain normal voiding tract. Postoperative follow up included uroflow, semen analysis and retrograde urethrography.

Results: Pre and intraoperative evaluation revealed that those patients were voiding through abnormal tract bypassing the posterior urethra and sphincter mechanism. In 2 patients, the bulbar urethra was anastomosed to bladder directly away from bladder neckand prostate. In the other 2 patients, a false passage was created endoscopically between the bulbar urethra and bladder through prostatic tissue. In all patients, posterior urethroplasty was achieved properly through perineal incision anastomosing bulbar urethra to prostatic urethra. False passages were excised and closed in layers. All patients achieved good urine flow and were continent on catheter removal. Semen ejaculation was normal. Postoperative urethrogram showed normal urethrographic picture.

Conclusions: Redo posterior urethroplasty should be always attempted to restore the normal anatomical course of urethra in patients with abnormally created urinary pathway. Suprapubic cystourethroscopy should be performed to identify the false passage from the true prostatic urethra. Restoring the normal urine pathway regains continence, ejaculatory function and good urine flow.

MP-11.06

Voiding Dysfunction after Successful Anastomotic Urethroplasty for Pelvic Fracture Urethral Injury

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Introduction and Objective: Anastomotic urethroplasty is the standard of care for Pelvic fracture urethral injuries (PFUI) undergoing definitive surgical management. There are a select group of patients who despite having a successful anastomotic urethroplasty have postoperative voiding dysfunction due to unrecognized neurogenic bladder injury. Our study aims to evaluate these patients and identify clinical signs to predict these injuries.

Materials and Methods: Our institute is a tertiary referral center for reconstructive urology cases. We have performed 1064 anastomotic urethroplasty in the last two decades. We retrospectively evaluated our prospectively maintained database. Inclusion criteria were patients with PFUI who underwent a successful anastomotic urethroplasty with postoperative voiding dysfunction. Success of anastomotic urethroplasty was determined by a retrograde urethrogram (RGU) and endoscopic evaluation. Voiding dysfunction was defined as patients with poor urine flow. We performed urodynamics (UDS) on each of these patients.

Results: Our series included 6 male patients (average age 27 years) who had PFUI secondary to road traffic accident. All patients underwent progressive perineal anastomotic urethroplasty for PFUI (all required step 3 anastomotic urethroplasty). Postoperatively these patients had poor flow after catheter removal. A RGU and endoscopy revealed a patent anastomosis. UDS showed neurogenic detrusor underactivity. There were variable occurrences of other lower motor neuron findings such as muscle atrophy, fasciculations, sensory loss, areflexia and fecal incontinence. The common factor was that all patients had a foot drop on preoperative clinical examination. S2.3 nerve roots supply both the foot and bladder. Neurogenic damage to bladder is not evidenced till the urethral anastomosis is performed as all these patients have a suprapubic catheter draining their bladder. Foot drop is a simple clinical sign to predict the possibility of neurogenic bladder dysfunction.

Conclusions: Coexistent neurogenic bladder injury with PFUI is rare but is of paramount importance predicting outcome. Our study highlights that the presence of foot drop and other lower motor neuron signs in patients with PFUI is a predictor for voiding dysfunction due to coexistent neurogenic bladder. We recommend that these patients should have urodynamics prior to surgical repair and must be counselled accordingly.

MP-11.07

Outcomes of Perineal Anastomotic Urethroplasty for Posterior Urethral Distraction Injuries Seen at the Komfo Anokye Teaching Hospital, Kumasi

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Introduction and Objective: In a developing country such as Ghana, pelvic fractures from motor vehicular accidents with its attendant posterior urethral distraction injuries are common and management of these injuries poses a great challenge to the urologist. The objective is to evaluate the long-term outcomes of perineal anastomotic urethroplasty for posterior urethral distraction injuries at Komfo Anokye Teaching Hospital (Kath), Kumasi.

Materials and Methods: Between January 2012 and October 2016, a total of 29 perineal anastomotic urethroplasties were done for posterior urethral distraction injuries at the Komfo Anokye Teaching Hospital by one urologist. A database which included patient's age, aetiology, time interval between injury and last surgery, previous urethral manipulations, length of defect and operation time, was kept prospectively for all 29 patients.

Results: The mean age was 45.3 years with a range of 9-49. Motor vehicular accidents accounted for 65.5% of the injuries while 20.7% were as a result of falls from heights and 13.8% had objects falling on them with associated pelvic fractures. The percentage of patients who had previous urethral manipulations (secondary cases) were 48.3% as against 51.7% of new cases without prior manipulations. Urethral manipulation consisted of urethroplasty and DVIU following a failed urethroplasty. Fourteen patients had failed perineal anastomotic urethroplasty prior to entry into this series. Of these patients, seven had 1, five had 2 and two had 3 previous failed attempts at anastomotic perineal urethroplasty before referral to Kath. The length of distraction defects ranged from 1.0cm to 5.9cm with a mean of 2.5cm. The mean duration of symptoms from injury to the last repair was 16 months (range 1-99). The mean operation time was 144.6 minutes. The overall success rate in this series was 93.1% with a mean follow up of 33.5 months (range 6-58).

Conclusion: Perineal anastomotic urethroplasty for post-traumatic posterior urethral distraction defects has a high long-term success rate even in a developing country. There was no significant difference in terms of outcome between primary and secondary cases.

MP-11.08

Indications and Results of Intestinal Ureteral Substitution

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Introduction and Objective: Ileal substitution is acceptable for treatment of extended ureteral strictures, but development of reflux, inflammation, electrolyte

imbalance limits its use. The aim of the study is to review indications, improve surgical technique and evaluate the results in patients who underwent different variants of intestinal plasty of the ureter.

Materials and Methods: Retrospective analysis of 175 patients that were surgically treated from 1982 to 2017 with intestinal plastics of the ureter. Mean age was 56.4 + 8.2 years. All patients underwent complex investigation prior to surgery. Patients follow up ranged from 6 months to 25 years.

Results: Indications to bowel substitution of the ureter were: 57 (32.6 %) – traumatic ureteral injuries; 107 (61.1 %) – cases of retroperitoneal fibrosis (radiation, idiopathic); 8 (4.6 %) – patients had ureteral cancer; 3 (1.7 %) – ureteral obstruction due to tuberculosis. 29 (16.6 %) patients underwent segmental ureteral plastics, 37 (21.1 %) – subtotal, 56 (32 %) – total, 53 (30.3 %) – bilateral ureteral substitution. Substitution of one or both ureters was performed with isoperistaltic graft. Ileo-vesical anastomoses were formed with antireflux mechanisms: in 109 (62.3 %) patients distal part of ileum was everted forming an intravesical cuff; in 66 (37.7 %) – the mucous membrane of a new orifice was incised longtidunally at 12 and 6 o'clock (1-2cm), the suture was placed on the line of the incision. This suture devided the orifice into two parts. In addition to antireflux protection, in 18 (10.3 %) patients, we used plication stitches on contra mesenteric margin of the intestinal segment. This technique straightens the graft and prevents reflux development. Long-term complications included: stenosis of uretero-ileal anastomosis in 3 (1.7%) patients, stenosis of ileo-vesical anastomosis – 6 (3.5%), loss of kidney function – 4 (2.3%), metabolic acidosis – 4 (2.3%). Vesico-ureteral reflux with intravesical cuff was seen in 41 (36.6%) patients, with intravesical cuff and divided orifice – 8 (13.3%) ($X2 = 13$; $p<0.01$).

Conclusion: Intestinal plastics of the ureter with antireflux protection are effective method of urinary tract recovery in patients with extended ureteral lesions. The cuff and suture dividing the intestinal orifice into two parts acts as a valve to eliminate vesico-intestinal reflux.

MP-11.09

Ileal Neoureter: A Urinary Tract Reconstruction Alternative Surgical Technique

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Introduction and Objective: Urinary tract reconstruction surgery in patients with medial ureter injury can be a challenge for the urologist.The ileal interposition is a valid option for ureteral reconstruction, when it is not possible to perform another technique. In the last decades, endoscopic procedures have led to iatrogenic ureteral lesions, which are, together with retroperitoneal fibrosis and tumor involvement, the main indications for ureteral reconstruction. Our aim is to present the ileal neureter technique as an alternative for reconstruction and replacement of extensive lesions of the middle ureter.

Materials and Methods: We present a 37-year-old female patient who underwent a rectal resection, left ureter partial resection and terminoterminal ureteroureteral anastomosis. The pathology report informed ureteral infiltration by adenocarcinoma of the rectum, with positive margins. A segmental resection of the middle portion of the left ureter was performed and reconstruction of the urinary tract with ileal interposition

Results: Technique: 1) Measurement of the length of the ureteral defect. 2) Section of a segment of ileum distal 20 cm from the ileocecal valve. Entero-entero-anastomosis with prolene surget 4-0. 3) Section of the left ureter at the proximal level. 4) Refinement of the ileum with mechanical suture Gia 60mm. 5) Neuretero-ureteral isoperistaltic anastomosis with separate vicryl 4-0 sutures. 6) Placement of a K30 catheter into the neoureter. 7) Neureteral implantation into the bladder. Left ureteral reconstruction was performed with satisfactory ileal interposition. The patient presented improvement of renal function without complications.

Conclusion: Ureteral reconstruction with ileum is a valid and feasible alternative in patients with extensive lesion of the middle ureter when other types of procedures are non viable, allowing kidney preservation.

MP-11.10

Urosymphyseal Fistulation - What's in a Name?

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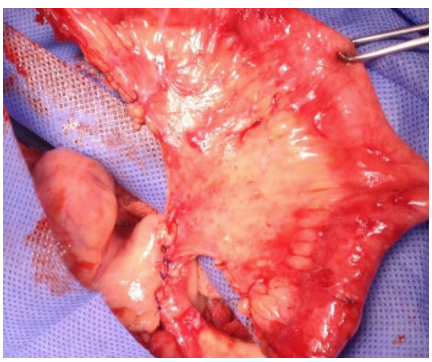
Introduction and Objective: Urosymphyseal fistulation is a recently described condition which is also referred to in the literature as osteitis pubis or osteomyelitis. The name of the condition reflects our understanding of the nature and cause of the problem and in view of the discrepancy in terminology we have assessed the clinical, radiological, biochemical, microbiological and histological evidence in our own group of patients to determine the true nature of the condition.

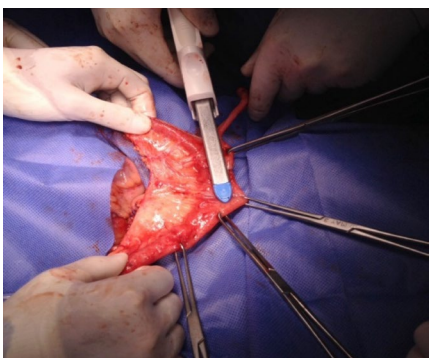
Materials and Methods: We have complete data in 27 of 37 patients treated in the last five years. Blood, imaging and microbiological investigations were performed preoperatively; microbiology and histology specimens were taken intraoperatively; there was further imaging and blood studies postoperatively.

Results: The only imaging investigation that was 100% reliable, showing the fistula and inflammatory changes in the surrounding bone and soft tissues in all patients and radiotherapy-related changes in 11 patients was MRI scanning. The white blood cell count was normal in 6 patients and the average elevation was to 12.3 x103/ µL when raised. The CRP was elevated in every patient up to a mean level of 26.5mg/L. There appeared to be no specific correlation between the CRP and the symptoms. Urine culture was positive in only 12 patients with an even spread between coliforms, pseudomonas spp. and candida spp. The tissue culture was positive in 11 of the patients and

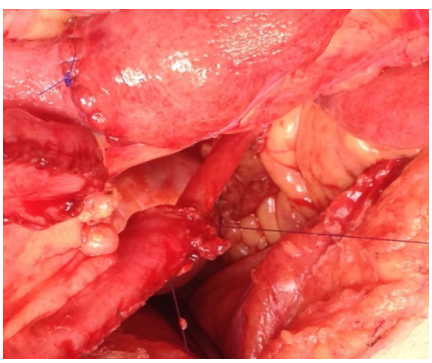
MP-11.09, Figure 1. Ileal Segment Resected



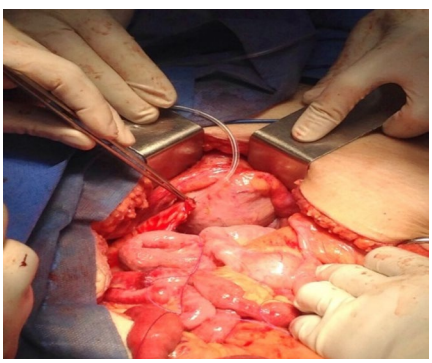
MP-11.09, Figure 2. Ileum Refinement with Mechanical Suture



MP-11.09, Figure 3. Neoureteral Anastomosis



MP-11.09, Figure 4. Neureteral Implantation into the Bladder



did not necessarily match the urine culture. Histological assessment showed chronic inflammation in both the symphysis and the adjacent bone, in 9 patients. There were radiotherapy-related changes in all of these. There were chronic inflammatory changes in the symphysis alone, directly related to the fistulous track and cavity, in 18 patients. There was no evidence of osteomyelitis in any patient.

Conclusions: Correlating the symptoms, clinical findings, surgical findings and the haematological and microbiological findings suggest that the fundamental problem is the urine leak and direct fistulation into (and sometimes through) the pubic symphysis. The more extensive the leak, the worse the pain. The urinary and tissue microbiology did not correlate with each other or with the symptoms. The correct terminology for this condition, we believe, is Urosymphyseal Fistulae.

MP-11.11

Management of Iatrogenic Urorectal Fistulae in Men with Pelvic Cancer

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Introduction and Objective: Urorectal fistula (URF) is a devastating complication of pelvic cancer treatments and a surgical challenge for the reconstructive surgeon. We report a series of male patients with URF resulting from pelvic cancer treatments, specifically prostate (PCa), bladder (BCa) and rectal cancer (RCa), and explore the differences and impact on outcomes between purely surgical and non-surgical treatment modalities.

Materials and Methods: Between October 2008 and June 2015, 15 male patients, aged 59-78 years (mean 67), with URF induced by pelvic cancer treatments were identified in our institutions. Patients with a history of diverticulitis, inflammatory bowel disease, or other benign conditions were excluded. We reviewed the patients' medical records for symptoms, diagnostic tests performed, type and etiology of the fistula, type of surgical reconstruction, follow-up and outcomes. Patients were divided into 2 groups: 8 received non-surgical/energy ablation treatments (G1) while 6 had surgery (G2).

Results: Fourteen patients underwent surgical reconstruction. One patient developed metastatic disease before URF repair and, therefore, was excluded from this study. Mean follow-up (FU) was 32.7 months (14-79). All patients received diverting colostomy and temporary urinary diversion. An exclusively transperineal approach was used in 9 (64.3%) patients and a combined abdominoperineal in 5 (35.7%). Overall successful URF closure was achieved in 12 (85.7%) patients, 9 (64.3%) of whom at the 1st reconstructive attempt, 2 (14.3%) after 2 attempts (in our institution), and 1 (7.1%) after 3 attempts (2 of which elsewhere). 83% of G2 patients needed 1 surgical attempt only, compared to 50% in G1. The failures were in G1. An interposition flap was used in 7 (50%) patients. Surgical reconstruction failed ultimately in 2 (14.3%) patients who still have a colostomy, and do not wish any further reconstruction.

Conclusion: Although surgical reconstruction may be extremely difficult and complex in the non-surgical/energy ablation patients, its successful reconstruction is possible in most through a transperineal, or a more aggressive abdominoperineal, approach with tissue interposition in selected patients.

MP-11.12

Surgical Management of Genitoperineal Hidradenitis Suppurativa: A 12 Year Experience

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Introduction and Objective: Hidradenitis Supurativa (HS) is a recurrent inflammatory disease of the apocrine glands that causes painful sinus tracts, abscesses and skin fibrosis which can be debilitating. We report our experience with surgical management of genitoperineal HS with complete resection and reconstruction using local skin flaps and grafts in 22 patients, the largest series of which we are aware.

Materials and Methods: We completed a retrospective chart review from June 2004 to June 2016 of patients treated with complete resection of HS in the genital and perineal region. Patient demographics, previous treatment of HS, incidence/nature of recurrence and complications were analyzed.

Results: From 2004-2016, 22 patients with at least one year follow-up underwent HS excision. Ninety five percent were male, 77% were African American. The average age was 46 years old, with an average BMI of 32 (19.7-50.7). The most common comorbidities included tobacco use (68%), obesity (59%), HTN (41%) and DM (23%). Prior to definitive excision, 16 patients (73%) had at least one incision and drainage. STSG was required in 27% of patients, and the rest were covered with local thigh, scrotal or perineal flaps. Average length of hospital stay was 2.7 days (0-22 days). The 30-day complication rate was 50% for minor complications (Grade 1-2) which included wound infection and dehiscence. 2 patients (9%) had a Grade 3B complication with no grade 4 or 5 complications. Recurrence of HS occurred outside of the resection bed 1-42 months after surgery in 7 (32%) patients, 6 (86%) of these patients requiring limited re-excision.

Conclusions: Conservative medical treatments, or incision and drainage of lesions are ineffective in curing the root cause of the problem, and persistence or worsening is the rule over time. Complete surgical resection followed by local flap or skin graft closure is possible, curative and most often successful, at the cost of an unsurprisingly high number of self limited wound complications. Urologists should endeavor to fix instead of merely manage this difficult problem.

MP-11.13

Disorders of Sex Development: Further Experience Managing Adults and Adolescents in Nigeria

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Introduction and Objective: Each individual presenting with Disorders of Sexual Development (DSD) creates special challenge especially when sex and gender are discordant. This paper reviews management of adolescents and adults with DSD and highlights challenges of managing such cases in an African setting.

Materials and Methods: In a combined prospective and retrospective study, we reviewed 29 consecutive adults and adolescents surgically managed for DSD between January 2005 and December 2016 in three Centres in North Western Nigeria with DSD.

Result: The mean age of the patients was 21.7 years (range 14 to 39). The diagnosis was Congenital Adrenal Hyperplasia in 10 (34.5%), Male Pseudo-hermaphrodite in 6 (20.7%), true Hermaphrodites in 2 (6.9%) and Mayer- Rokitansky- Küster- Hauser Syndrome (MRKH) in 11 patents. Twelve patients had discordance between genetic sex and gender. Six of them were females with CAH raised as males (Male Assigned Genetic Female, MAGF) while another 6 were males with genital ambiguity raised as females (Female Assigned Genetic Male, FAGM). All the 12 patients with discordance at Sex and gender rejected reassignment to the appropriate sex and insisted on remaining as raised and named at birth. FAGM were reassigned female sex by gonadectomy, Colovaginoplasty, phallic reduction, vulvoplasty and hormonal therapy for breast development. Vaginoplasty is more difficult in these patients and two of them required dilation and revision of the vaginoplasty. MAGF, were reassigned by ovariectomy, hysterosalphingectomy, colpectomy and reduction mammoplasty were performed on 4 in one stage with a plan to metoidioplasty in the second stage, while on testosterone. Only two patients returned for metoidioplasty. Eleven Patients with MRKH were offered Colovaginal reconstruction and 8 of the MRKH patients are known to be sexually active. Patient with CAH in appropriate gender underwent feminizing genitoplasty with or without nerve preserving clitoral reduction. Hormonal therapy could be afforded and sustained in only three patients.

Conclusion: When sex and gender are discordant in societies and cultures that prohibit gender change in adult, patients will insist on maintaining sex of rearing. Sex reassignment establishes self-esteem, societal integration and marital harmony at the expense of fertility and prolonged hormonal therapy. Feminizing vaginoplasty for CAH and colovaginoplasty for MRKH Syndrome are very satisfying.

MP-11.14

Re-Operative Abdomino-Perineal Reconstructive Surgery

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Introduction and Objectives: Most re-operative surgery after failed previous reconstruction is transperineal (TP) with a high success rate and low complication rate. In recent years there has been an increasing

incidence of patients with complications of surgery or radiotherapy (DXT) particularly, but not exclusively for pelvic cancer, requiring re-operative surgery abdomino-perineally (AP).

Materials and Methods: Between 2009 and 2014 we performed 104 AP procedures in 91 patients. In most cases surgery was for uro-intestinal fistulation or other iatrogenic injury. Fifty nine procedures were for failed surgery to treat complications of treating pelvic cancer; the other 45 for benign pelvic pathology. Six procedures were in patients who had no surgery or DXT other than their previous last failed attempt at reconstruction (PLFAAR); 15 procedures in patients who had no surgery other than their PLFAAR but had DXT; 51 procedures in patients who had previous surgery other than their PLFAAR but no DXT; 32 procedures in patients who had both previous AP surgery other than their PLFAAR and DXT. In all, 83 procedures were performed in 68 patients who had previous surgery and between them they had had 164 previous laparotomies (1-7) other than their PLFAAR.

Results: Fifty nine procedures (57%) in 54 patients (60%) were uneventful and all had a satisfactory outcome. Forty five procedures (43%) in 37 patients (40%) had 57 complications. Three patients died, 6 underwent early re-operation for operative complications and 6 needed further surgery to get a satisfactory result, in 3 of whom this was not achieved, giving an overall failure of 3. DXT produced a 47% complication rate due to incomplete healing or infective complications. Repeated previous surgery produced a 35% incidence of surgical complications such as bowel leaks; indeed 4 previous laparotomies virtually guarantee a significant postoperative complication. The combination of surgery and DXT carried a 65% complication rate. All the early returns to surgery were in the latter two groups.

Conclusions: Given that half of these patients have survived their treatment for pelvic cancer but are left with serious complications, they pay a significant price for their survivorship. They must therefore be counselled appropriately before embarking on the treatment of their primary malignancy and its subsequent complications.

MP-11.15

Impact of Sexual Function after Surgical Treatment of Penile Fracture

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Introduction and Objective: Penile fracture (PF) is a rare urological emergency. Surgical treatment is the preferred approach in the PF and aims to restore the anatomical and functional integrity of the penis, in order to avoid complications and sexual dysfunctions. The aim of this study was to conduct a comprehensive assessment of sexual function of patients undergoing surgical treatment of PF, covering psychological aspects related to trauma.

Materials and Methods: Patients undergoing surgical treatment of PF from January 2014 to July 2016 were followed in our department for at least 6 months. Those patients answered the International Index of Erectile Function (IIEF-5) and our sexual questionnaire assessing sexual drive and ejaculatory function. Moreover, patients were asked about the fear of having a new episode of FP and if it disturbed their sex life, leading to performance anxiety or some change in sexual habits, such as avoiding certain sexual positions. Finally, we searched the penis and interviewed the patients about any evidence of pain in erection, penile nodules or curvature acquired after surgery.

Results: A total of 38 patients conducted the follow-up. The mean age was 39 years (range: 18-66). The sexual etiology was observed in 30 (78.9%) cases and non-sexual in 08 (21.1%). Only one patient had erectile dysfunction before the trauma. Duration of follow-up ranged from 06-28 months (mean: 11.5). Three (7.8%) patients had abnormality of libido, 04 (10.5%) patients reported acquired premature ejaculation and 01 (2.6%) delayed ejaculation after the trauma. Five (13.1%) patients complained penile curvature after surgery. These patients not said bothered and intra-cavernosal injection test shows deviation more than 30 degree only in one case. Penile nodule was found in 29 (76.3%) patients and pain in 07 (18,4%) cases. Postoperative erectile function was recovered in 32 (84.2%) cases, and 06 (16%) patients developed erectile dysfunction (05 mild and 1 mild-moderate) with 05 patients needing oral treatment. Psycho-sexual evaluation showed that 27 (71%) patients had fear of a new episode of PF. Of these, 15 (55.5%) reported negative impact on sexual life, presenting anxiety performance in 13 (48.1%) cases. Of the 30 sexual etiology cases, 12 (40%) avoiding the position or cause which led trauma.

Conclusion: Surgical treatment of PF has satisfactory results, providing adequate recovery of sexual function, even in the long term follow-up. Most patients preserve erectile function without development of penile curvature or deformity. However, erectile dysfunction could occur in the late postoperative period and must be treated. Psychological sequelae are common, causing fear of recurrence and resulting negative impact on the sexual life of these patients, which must be closely monitored.

Moderated ePosters Session 12 Urinary Incontinence

Sunday, October 22
1415–1545

MP-12.01

Long Term Adherence to Combination of Mirabegron and Antimuscarinic Drug on Overactive Bladder Symptoms

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Introduction and Objective: Adherence to overactive bladder (OAB) medications is reported to be lower than that of other drugs such as cardiovascular, antidiabetic and osteoporosis. Recent clinical trials have proven the efficacy and safety of combination of mirabegron and solifenacin on overactive bladder (OAB) symptoms. In this study we retrospectively reviewed the long term adherence to the combination treatment of mirabegron and antimuscarinic drugs by comparing the monotherapy of OAB drugs.

Materials and Methods: Between August 2011 and August 2016, 442 patients who initiated a prescription of OAB medications were enrolled in this study. We evaluated the persistence rates of each drugs in all patients and urodynamic findings in the patients who underwent cystometry among these patients.

Results: Mean age at the initial prescription was 64.4 years. Mean follow-up period was 12 months. Among them 64 patients underwent urodynamic study. Of them 321 patients were treated with antimuscarinic drugs (solifenacin, propiverine, fesoterodine and imidafenacin), while 121 patients were treated with mirabegron. 258 (58.4%) patients switched the medication or made a cessation of the drug due to the small efficacy, adverse events and so on. Mean persistence rate of all OAB drugs alone was 45% at 12 months and 32% at 24 months. Of them 24 patients received the combination treatment of antimuscarinic drugs and mirabegron because of the dissatisfaction of monotherapy. The persistence rate of combination treatment is significantly higher (80% at 24 months) compared to the monotherapy (P= 0.0022). Urodynamic studies showed that patients treated with the combination treatment have significantly higher incidence of urge incontinence followed by detrusor overactivity than that of patients treated with monotherapy.

Conclusion: OAB drug monotherapy shows the poor persistence rates, while combination use shows long term persistence rates without adverse events. Especially the patients with wet OAB may benefit from the combination treatment.

MP-12.02

The Temporary Implantable Nitinol Device (Itind) for the Minimally Invasive Treatment of BPH: Comparison of 3-Year Outcomes and Cost in Canada

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Introduction and Objective: The iTind (Medi-Tate Ltd.) device, comprised of 3 nitinol struts and an anchoring leaflet, is deployed in the prostatic urethra where it expands, resulting in ischemic incisions and a re-shaping of the bladder neck and prostate. The device is implanted in 5 minutes using a rigid cystoscope. After 5 days it is removed through a 22F catheter. The device is Health Canada approved. Three-year clinical outcomes and economic comparisons are made to the prostatic urethral lift (PUL) system (UroLift – NeoTract Inc.).

Materials and Methods: A one-arm single-centre, prospective study of the iTind in 32 men was conducted (1 yr results). Similarly, the L.I.F.T. study, a multicentre, sham-controlled prospective study with similar inclusion criteria and outcomes examining the PUL has published its 3yr results.

Results: At baseline patient's mean (SD) total prostate volume (TPV), IPSS score, QoL and Qmax were 29.5 (+7.4), 19 (14-23), 3 (3-4), and 7.6 (2.2) ml/sec. After 36mos IPSS score, QoL and Qmax were 12 (6-24), 2 (1-4) and 13 ml/sec. Only 1 patient (3.1%) required TURP. By comparison, the PUL study baseline patient's mean (SD) TPV, IPSS score, QoL, and Qmax were 44.5 (+12.47), 22.3 (13-35), 4.6 (4.4-4.8), 7.9 (3-13) ml/sec. After 36mos IPSS score, QoL, and Qmax were 12.7 (11-14), 2.2 (1.9-2.6), and 11.8 (10.6-13) ml/sec. The iTind resulted in superior Qmax (p=0.033) and similar IPSS (p=0.098) and QoL (p=0.192) improvements compared to PUL implant at 3 years. In Canada, the iTind device cost is approx. $2500 CAD and 1 device is used per case. The approx. cost of a PUL implant is $800 CAD/implant and the mean number of PUL implants used in the L.I.F.T. study was 5.2. Thus in Canada the approx. cost per PUL procedure will be $4160 CAD.

Conclusions: The iTind demonstrates equivalent or superior 3-year outcomes compared to the UroLift and is a lower cost option in Canada.

MP-12.03

Female Urinary Incontinence and Obesity Assessed by Anthropometry and Dual-Energy X-Ray Absorptiometry: Analysis from the 2008-2009 Korean National Health and Nutrition Examination Survey

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Introduction and Objective: Obesity measured by anthropometry is an obvious risk factor for urinary incontinence (UI). However, scant data concerning obesity assessed by dual energy X-ray absorptiometry and UI are available.

Materials and Methods: We included 5,792 women over the age of 20 years who had participated in the Korea National Health and Nutrition Examination Survey IV. The condition of UI was established if a woman answered 'yes' to "Do you have current UI?" Obesity was assessed using anthropometry and dual energy X-ray absorptiometry. We used chi-square test, t-test, the receiver operating characteristic curves, and logistic regression analysis.

Results: Waist circumference (mean±standard deviation: 78.5±10.0 vs 82.4±9.1 kg), body weight (56.9±9.1 vs 58.5±8.4 kg), and body mass index (23.3±3.4 vs 24.2±3.1 kg/m2) were significantly higher in the UI group. Additionally, total fat mass (mean±standard deviation: 18.5±5.3 vs 19.4±4.9 kg), trunk fat mass (9.3±3.4 vs 10.1±3.2 kg), trunk fat/leg fat (1.58±0.54 vs 1.73±0.50), total body fat percentage (32.3±5.4 vs 33.0±5.0 %), and trunk fat percentage (32.4±7.3 vs 33.9±6.6 %) were significantly higher in the UI group. Among parameters, trunk fat mass/leg fat mass showed highest sensitivity (83.6%) and their cut off value was 1.272. Before and after adjustment, trunk fat mass/leg fat mass>1.272 is significantly related to UI and showed highest ORs among dual energy X-ray absorptiometry parameters (adjusted ORs (95% confidence interval): 1.807 (1.343-2.431)). Anthropometry parameters such as waist circumference were comparable to dual energy X-ray absorptiometry parameters in terms of relations with UI.

Conclusion: Obesity parameters obtained dual energy X-ray absorptiometry are closely related to UI. Among parameters, trunk fat/leg fat is most potent.

MP-12.04

Preoperative Low Detrusor Pressure at Maximum Urinary Flow Predicts Unfavorable Early Clinical Outcomes of the Short Autologous Pubovaginal Sling in the Treatment of Female Stress Urinary Incontinence

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Introduction and Objectives: In 2000, we devised the short autologous pubovaginal sling (PVS) as a less invasive and safer procedure than conventional autologous PVS. This procedure provides a surgical option for women with stress urinary incontinence (SUI) who do not want to or cannot undergo synthetic mesh surgeries because of mesh-related complications. We investigated the relationship between perioperative urodynamic results and early surgical outcomes to identify the appropriate candidates for this procedure.

Materials and Methods: From 2001 to 2016, 104 women with SUI underwent the short autologous PVS in our institution, and urodynamic studies (UDS) were performed preoperatively and within three-month postoperatively. We collated the following information from medical records: patient characteristics, early surgical outcomes based on a one-hour pad test, and early postoperative complications. The relationships between urodynamic parameters and early surgical outcomes were then evaluated.

Results: Mean age at surgery was 64 years (19–82). Three-month postoperative objective outcome was as follows: 90 women (86%) were cured, 7 (7%) improved, and 7 (7%) had failure. Early postoperative complications were transient urinary retentions in 11 (10%) women urinary infections in 2 (2%), and pulmonary embolism in 1 (1%). Of the 104 women,

73 underwent UDS preoperatively and 27 underwent UDS again postoperatively. Twenty-two (30%) women were diagnosed with intrinsic sphincter deficiency, which was defined as a preoperative abdominal leak point pressure (ALPP) less than 60 mmHg. Detrusor overactivity was seen in 6 (8%) women. Comparisons between pre- and postoperative urodynamic parameters showed significant improvement in mean ALPP from 74.9 to 90.0 cmH2O (p=0.042). Logistic regression analysis showed that preoperative low detrusor pressure at maximum urinary flow (Pdet Qmax) was the only factor among the urodynamic variables to predict both non-curative treatments (odds ratio 1.11, 95% confidence interval 1.02–1.24, p=0.046) and postoperative transient urinary retentions (1.09, 1.00–1.23, p=0.047).

Conclusion: Preoperative low Pdet Qmax was a significant risk factor for non-curative short autologous PVS. This procedure should be applied carefully to women with low Pdet Qmax.

MP-12.05

A Prospective Randomized Trial of Patients of the Low Currency Countries after Passing an Autologous Fascial Sling and Tension-Free Vaginal Tape Therapy: Clinical and Quality-of-Life Outcomes

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Introduction and Objective: Thirty five percent of women of childbearing age suffer from the urinary incontinence. Around half of them have stress incontinence. Many therapy modalities have been used to cure stress incontinence, and among the most popular are tension-free vaginal tape (TVT) and rectus fascia sling (RFS). The purpose of the trial is to estimate the impact of the autologous fascial sling (RFS) and (TVT) therapy on quality-of-life of women in the underdeveloped countries.

Materials and Methods: Forty one women who suffered from the urinary incontinence were randomly distributed into two groups. Group G1 (n = 34), went through RFS therapy and group G2 (n = 29) had TVT implant. The clinical follow-up was conducted at 6, 12 and 36 months.

Results: TVT operative time was substantially shorter than RFS. In the G1 group, treatment rates were 71% at one month, 57% at six and 12 months. In G2, cure rates were 73% at 6 months, 65% at 12 months, and 59% after 36 months; there was no significant difference between those two groups. As to the satisfaction rate, there was no statistical difference between groups of patients. Patients' life quality analysis performed in 36 months showed that there was no significant difference between women groups.

Conclusion: We came to a conclusion that fascial sling therapy takes more time if compared to TVT method, but this treatment method turned out to be very cost-effective. Without no doubt, RFS treatment is a proper solution for the urine incontinence treatment of the patients from the underdeveloped countries. Long-lasting clinical follow-up sessions are vital before rigorous conclusions can be drawn. Similar results are revealed between RFS and TVT methods, except the fact that TVT operative time was shorter.

MP-12.06

A Review of Over 100 Patients Undergoing Percutaneous Tibial Nerve Stimulation in an Office Setting: Real World Experience

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Introduction and Objective: Clinical trials have demonstrated the effectiveness of percutaneous tibial nerve stimulation (PTNS) for overactive bladder symptoms, but little data exists regarding outcomes in a real world patient population/setting. We examined patients that had PTNS for overactive bladder symptoms in one large urology practice.

Materials and Methods: All adult patients that had PTNS between 2012 and 2015 were retrospectively reviewed for demographics, history, symptoms, and treatments used before, concurrently, and after undergoing PTNS. Descriptive statistics were performed.

Results: Of 113 patients (mean age 75 years), most were female (65.5%), married (78.1%), and retired/unemployed (81.4%). The most common indication for PTNS was nocturia (93%), with or without urinary urgency/frequency and urge incontinence (75.2%). Prior treatments included anticholinergics in 75.2% of patients (most had tried 1-3 different medications), mirabegron (41/112; 36.6%), behavioral modification (29.2%), and pelvic floor physical therapy (18.6%). Patients completed a mean of 10.5 ± 3 of 12 planned weekly PTNS treatments. At 6 and 12 weeks respectively, 101 (89.4%) completed at least 6 treatments and 71.3% (62/87) were improved, and 82 (75.6%) completed all 12 weekly treatments and 70.6% (60/85) had improved. The most common reason for failure to complete all 12 treatments was too little/no improvement (14 patients) and adverse events (2 worsening symptoms, 1 lower extremity edema, 1 erythema at needle insertion site). 40/105 (38.1%) used concomitant treatments for their symptoms with the most common being anticholinergic/antimuscarinic therapy. Forty seven out of a hundred and thirteen (41.6%) of patients went on to complete a median of 3 monthly maintenance treatments. Reasons for non-compliance with beginning/continuing maintenance included lack of efficacy (60/78: 77%), happy with current improvements (10/78; 13%), cost (4/78; 5%), and other (4/78; 5%). 72/113 patients had an office visit within the last year. New treatments after PTNS included onabotulinumtoxinA (16%), mirabegron (16%), new anticholinergic/antimuscarinic (8%), behavioral modification (6%), chronic neuromodulation (5%), pelvic floor physical therapy (5%) and other treatments (7%).

Conclusions: Although most patients achieve symptom improvement after weekly PTNS, lack of adherence to maintenance therapy may limit long term feasibility of PTNS.

MP-12.07

Significance of Internal Obturator Muscle Volume as A Urinary Incontinence Predictor after Robot-Assisted Radical Prostatectomy

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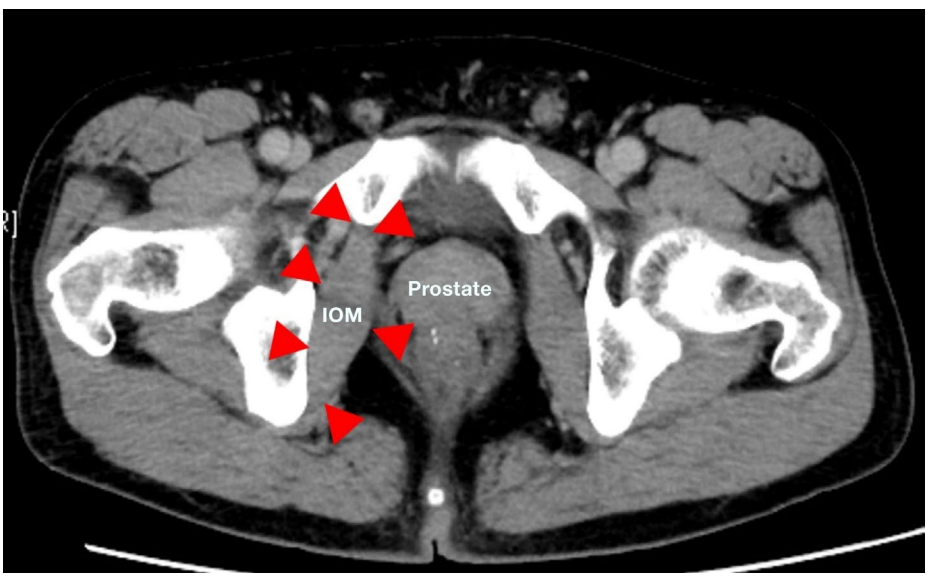
Introduction and Objective: Urinary incontinence is very important problem for the quality-of-life after Robot-assisted radical prostatectomy (RARP).The useful predictor of urinary incontinence after RARP has not been clarified. Here, this research focused on

MP-12.07, Figure 1. Mean Number of Stress Leaks/Day in Post-Menopausal Women with 3-15 Stress Leaks/Day at Baseline



the internal obturator muscle (IOM) volume (Figure1). The role of IOM functions in urinary incontinence is not fully understood, although the physical mechanisms have been identified. This study reports on the relationship between urinary incontinence and the IOM volume.

Materials and Methods: RARP cases were analyzed retrospectively. The urinary incontinence volumes were measured at 5 days after the removal of the balloon catheter. The urinary incontinence was defined as 100ml/day or more of leakage of urine. The IOM volume of preoperative CT was measured using ImageJ (National Institutes of Health). Preoperative factor and surgery factor were examined using a cox proportional hazards regression analysis to predict the urinary incontinence.

Results: Ninety eight cases operated RARP by a single surgeon from April 2012 to September 2016 were analyzed. The IOM volumes were divided into five groups (< 30, 30-35, 35-40, 40-45 and 45cm3≦). The rate of urinary incontinence was 63.2% (12/19cases), 40.9% (9/22cases), 50% (11/22cases), 41.7% (5/12cases), 17.9% (4/23cases), respectively. The rate of urinary incontinence was significantly lower in the group with an IOM volume 45cm3≦ than in other groups. The multivariate analysis suggested that IOM volume only shows a significant association with the low urinary incontinence rate (p=0.03 HR 0.29 95%CI 0.095-0.896).

Conclusions: IOM volume might be useful as an early urinary incontinence predictor after RARP.

MP-12.08

Adverse Events after Intradetrusor OnabotulinumtoxinA Injection in Idiopathic Detrusor Overactivity

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Introduction and Objective: The literature reports rates of transient urinary retention requiring catheter use after intradetrusor onabotulinumtoxinA ranging from 4 to 43%. We evaluated the rate of and factors predicting catheter use and adverse events after this treatment.

Materials and Methods: Retrospective review of patients who underwent intradetrusor onabotulinumtoxinA injection from January 1, 2010 to September 1, 2015, excluding patients with a history of neurologic diagnosis. History, procedural details, and post-procedure data were reviewed. Descriptive statistics and Wilcoxon rank sum test were performed.

Results: One hundred and twenty six patients were identified with mean age of 65.6 ± 16.2 yr, 22% had a history of diabetes, and pre-procedure post-void residual was 37 mL. Eighty seven patients had urodynamics. Mean follow-up was 236.9 days. One hundred U of toxin was injected in 110/124 (88.7%) of patients, 150U in 12 (9.7%), and 200U in 2 (1.6%). Our general algorithm was to initiate catheter use when the PVR was > 350cc or at a lower volume if the patient was symptomatic. Mean post-procedure PVR was 152.7 ± 192 mL (range 20 – 1000 mL). Within two weeks, 20/124 (16.1%) of patients were started on catheterization, 16 for elevated PVR and 4 for symptoms. Seven had an indwelling catheter and 13 started self-catheterization. All patients requiring catheterization received 100U. No relationship was found between urodynamic detrusor overactivity (DO), mean cystometric capacity, or Qmax and the need for catheterization. Adverse events included 8/124 (6.5%) with gross hematuria (GH) and 13/124 (10.5%) with a UTI. Patients with GH received a mean of 138 ± 52U vs. 111 ± 37U in those without GH (p = 0.023). Increased risk of catheterization was seen with history of previous Interstim (10/20 patients catheterized had prior Interstim vs. 22/101 not requiring catheter had prior Interstim, p = 0.009) as well as having a functioning, "on" Interstim (4/14 (28.6%) "on" pts catheterized vs 8/86 (9.3%) "off" pts, p = 0.06).

Conclusions: Our catheterization rate after intradetrusor onabotulinumtoxinA in neurologically normal patients with idiopathic overactive bladder was 16%. Need for catheter was associated with history of prior Interstim and with Interstim "on" vs "off".

MP-12.09

Low Incidence of Clean Intermittent Catheterization and Substantial Treatment Response with OnabotulinumtoxinA in Different Age Groups of Overactive Bladder Patients: A Pooled Post-Hoc Analysis of Three Randomized, Controlled Trials

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Introduction and Objective: Overactive bladder (OAB) patients may need to initiate clean intermittent catheterization (CIC) after treatment with onabotulinumtoxinA. We evaluated the risk of CIC and assessed the efficacy and quality of life (QOL) outcomes with onabotulinumtoxinA in different age groups of OAB patients.

Materials and Methods: Pooled data from onabotulinumtoxinA-treated patients in three randomised, controlled trials (N=1177) were analysed (post-hoc) by age: <40, 40-49, 50-59, 60-69 and ≥70 years. Assessments at week 12 post-treatment were: CIC incidence and duration, mean and percent change from baseline in urinary incontinence (UI) episodes/day, proportions of patients with 100% UI reduction (ie, "dry"), positive response (urinary symptoms 'improved'/'greatly improved') on the treatment benefit scale (TBS), and change from baseline in the Kings Health Questionnaire (KHQ) Role Limitations and Social Limitations domain scores. Adverse events (AEs) were recorded.

Results: The CIC rate after onabotulinumtoxinA was 5.2% in the overall pooled population; the <40 group had the lowest rate (1.1%), which increased slightly with age (3.2%, 5.3%, 5.3%, 7.2% in 40-49, 50-59, 60-69, and ≥70 groups, respectively). Mean CIC duration was 3 and 44 days in the <40 and 40-49 groups, respectively, and ranged from 78 to 88 days in the other groups. All groups showed substantial reductions in UI episodes/day (–2.4, –2.6, –3.1, –3.6, –2.9) and percent change in UI (range: –46.8% to –64.4%). The proportion of patients with 100% UI reduction was the highest in the <40 group (45.6%) and ranged from 20.3% to 34.2% in all other groups. High proportions of patients reported a positive response on the TBS (range: 66.2%-73.8%). Improvements in KHQ domain scores were ~3-6 times the minimally important difference. Urinary tract infection was the most commonly reported AE in all groups (range: 8.3%-16.8%).

Conclusion: In this post-hoc analysis of a pooled population of OAB patients, the risk of CIC was low in all groups, and showed a small increase with age. The <40 group had the lowest rate of CIC (1.1%). All age groups showed substantial UI reductions, QOL improvements and treatment benefit. Overall, onabotulinumtoxinA was well tolerated.

MP-12.10

"Kegels in a Bottle": Preliminary Results of a Selective Androgen Receptor Modulator (GTX-024) for the Treatment of Stress Urinary Incontinence in Women

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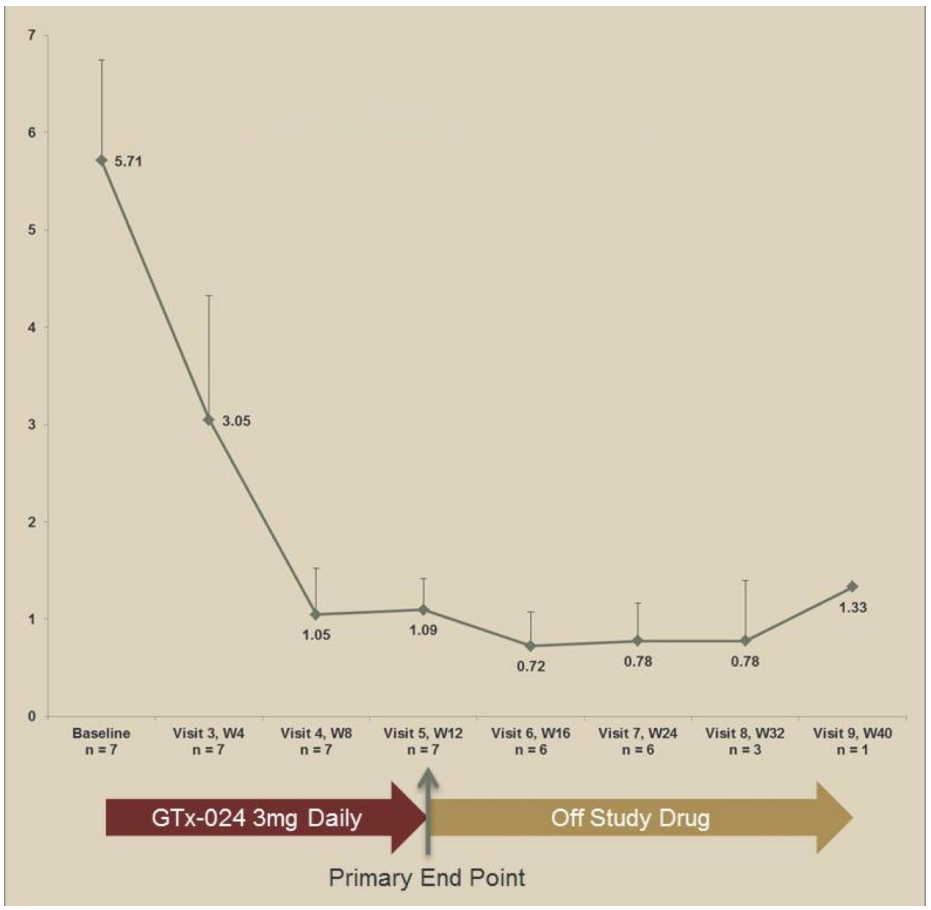
Introduction and Objective: No oral therapies are available in the US for stress urinary incontinence (SUI). The pelvic floor and urinary sphincter are androgen receptor (AR) rich and can be modulated by androgenic agents. GTx-024 is a novel selective AR modulator (SARM) used safely in clinical trials of more than 1,500 patients for other disease processes. The purpose of this pilot study is to assess the efficacy and safety of GTx-024 for SUI.

Materials and Methods: In this Phase 2 study, 3 mg of GTx-024 was given daily for 12 weeks to post-menopausal women. Inclusion criteria: predominant SUI, SUI symptoms for ≥6 months, 24 hour pad weights >3 grams, 3-15 SUI episodes per day, and a positive bladder stress test. Primary endpoint: number of SUI episodes per day on 3-day voiding diary. Secondary endpoints: pad weights, bladder stress test, and quality of life instruments including the Female Sexual Function Index (FSFI) and Patient Global Impression of improvement (PGI-I).

Results: Preliminary findings are presented on the first seven patients completing 12 weeks of treatment. SUI decreased 80.9% (Figure 1). All patients saw at least a 65% reduction in leaking episodes. Improvement is durable post treatment demonstrating con-

MP-12.10, Figure 1. Mean Number of Stress Leaks/Day in Post-Menopausal Women with 3-15 Stress Leaks/Day at Baseline



tinued improvement up to 5 months. Pad weights decreased from a mean of 29.6 g at baseline, to 13.9 g at 12 weeks. FSFI scores increased from a mean of 16.8 at baseline, to 20.3 at 12 weeks, with 5/7 patients showing improvement. PGI-I scores were improved at 12 weeks. Adverse events were minimal with none above a Grade I.

Conclusion: These early results suggest GTx-024 substantially improves stress incontinence in women with associated reductions in pad weight and improvements in quality of life measurements. The safety profile has been excellent. Additional patients will be studied as part of this ongoing study.

MP-12.11

Long Term Outcome Following Bladder Neck Artificial Urinary Sphincter Implantation

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Introduction and Objectives: Implantation of the artificial urinary sphincter (AUS) around the bladder neck (or prostate in men) remains the goldstandard treatment for women with refractory sphincter weakness incontinence (SWI) or patients with neuropathic pathology. This study evaluates long-term outcomes of the AMS800TM device in this patient population.

Materials and Methods: Over a 20 year period, 140 bladder neck (BN) AUS were implanted in 111 patients (mean age 39.1 years) by a single surgeon. Aetiology of incontinence: Spina bifida 53, neuropathic (other) 15, failed female incontinence surgery 22, pelvic fracture 18, extrophy/epispadias 15, following undiversion cystoplasty 6, other 4. Seventy three were primary procedures, 18 revisions after previous infection/erosion and 49 replacements for malfunction. Mean follow-up was 112.8 months (12.4 – 243.7 months).

Results: Fifty five of 140 (39.4%) devices were explanted at a mean of 39.1 months; 26 for erosion (50.4 months), 22 for malfunction (65.1 months), 7 for infection (1.5 months). Thirty one of 7 (42.4%) primary, 8 of 18 (44.4%) revision and 17 of 49 (34.7%) replacement implants were explanted. One hundred and eighteen devices were implanted in a single stage (n=52, 44% explanted) while 22 were done as a staged procedure (n=5, 22.7% explantated). In 68 cases patients performed self catheterisation (ISC) with the device explanted in 25(37.3%) compared to 30 of 72 (41.4%) with no ISC. Cystoplasty was present in 67 cases of which 26 (38.8%) were explanted compared to 73 with no cystoplasty in which 31(42.3%) were explanted. Eighty five devices (66.6%) remain in situ (42 primary, 10 revisions, 33 replacements). Seventy eight (91.8%) are functioning normally. Two patients are continent with just a cuff in situ and did not have the remainder of the components implanted. The other 7 are incontinent due to failure of the implant or de novo detrusor overactivity.

Conclusion: Apart from being more surgically challenging, implantation of a bladder neck AUS is associated with excellent functional outcomes albeit with a significantly higher explantation rate when compared to bulbar AUS. We have hereby shown no difference in explantation rate between primary and non-primary bladder neck AUS. The overall explantation rate is no different whether a cystoplasty is present or not or whether patients performing ISC.

MP-12.12

Policies for Replacing Long-Term Indwelling Urinary Catheters in Adults: Cochrane Systematic Review of the Evidence

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Introduction and Objective: Long-term indwelling catheters are used commonly in people with lower urinary tract problems. There are many potential complications and adverse effects associated with long-term catheter use. This systematic review was conducted to determine the effectiveness of different policies for replacing long-term indwelling urinary catheters in adults.

Materials and Methods: We searched the Cochrane Incontinence Specialised Trials Register, which covers CENTRAL, MEDLINE, MEDLINE In-Process, MEDLINE Epub Ahead of Print, CINAHL, ClinicalTrials.gov, WHO ICTRP and handsearching of journals and conference proceedings (searched 19 May 2016), and the reference lists of relevant articles. Randomised controlled trials were included. At least two review authors independently performed data extraction and assessed risk of bias of all the included trials. Quality of evidence was assessed by adopting the GRADE approach.

Results: Three trials met the inclusion criteria, with a total of 107 participants. The key findings are summarized below: (i) there was a lower incidence of symptomatic UTI in people whose catheter was changed both monthly and when clinically indicated (risk ratio (RR) 0.35, 95% confidence interval (CI) 0.13 to 0.95; very low quality evidence) compared to only when clinically indicated, (ii) there was not enough evidence to assess the effect of antibiotic prophylaxis on reducing: positive urine cultures at 7 days (RR 0.91, 95% CI 0.79 to 1.04); infection (RR 1.41, 95% CI 0.55 to 3.65); or death (RR 2.12, 95% CI 0.20 to 22.30; very low quality evidence), (iii) there was no statistically significant difference in the incidence of asymptomatic bacteruria at 7 days (RR 0.80, 95% CI 0.42 to 1.52) between people receiving water or chlorhexidine solution for periurethral cleansing at the time of catheter replacement. However, none of the 16 participants developed a symptomatic catheter-associated urinary tract infection at day 14.

Conclusion: There is currently insufficient evidence to assess the value of different policies for replacing long-term urinary catheters on patient outcomes. There is an immediate need for rigorous, adequately powered randomised controlled trials which assess important clinical outcomes and abide by the principles and recommendations of the CONSORT statement.

MP-12.13

Pelvic Floor Muscle Training (PFMT) Added to another Active Treatment versus the Same Active Treatment Alone for Urinary Incontinence (UI) in Women: Findings of a Cochrane Systematic Review

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Introduction and Objective: PFMT is a first-line conservative treatment for UI in women. Other active treatments include: physical therapies; behavioural therapies; electrical or magnetic stimulation; mechanical devices (e.g. continence pessaries); drug therapies; and surgical interventions including sling procedures and colposuspension. This systematic review has evaluated the effects of adding PFMT to any other active treatment for UI in women.

Materials and Methods: We searched the Cochrane Incontinence Group Specialised Register, which covers CENTRAL, MEDLINE, MEDLINE in process, ClinicalTrials.gov, WHO ICTRP and handsearching of journals and conference proceedings, and CINAHL. We included randomised or quasi-randomised trials. Two review authors independently assessed trials for eligibility and methodological quality in accordance with the Cochrane Handbook.

Results: Thirteen trials met the inclusion criteria. More women reported cure or improvement of stress UI in two trials comparing PFMT added to electrical stimulation to electrical stimulation alone, but this was not statistically significant (9/26 (35%) versus 5/30 (17%); risk ratio (RR) 2.06, 95% confidence interval (CI) 0.79 to 5.38); very low quality evidence. More women reported cure or improvement of UI comparing PFMT added to vaginal cones to vaginal cones alone, but this was not statistically significant (14/15 (93%) versus 14/19 (75%); RR 1.27, 95% CI 0.94 to 1.71); very low quality evidence. One trial evaluating PFMT when added to drug therapy provided information about adverse events (RR 0.84, 95% CI 0.45 to 1.60; very low-quality evidence). With regard to condition-specific quality of life, there were no statistically significant differences between women who received PFMT added to bladder training and those who received bladder training alone at 3-months after treatment, on either the IIQ-Revised scale (mean difference (MD) -5.90, 95% CI -35.53 to 23.73) or on the UDI scale (MD -18.90, 95% CI -37.92 to 0.12). A similar pattern was observed between women with SUI who received PFMT plus either a continence pessary or duloxetine and those who received the continence pessary or duloxetine alone.

Conclusions: This systematic review found insufficient evidence to state whether or not there were additional effects by adding PFMT to other active treatments when compared with the same active treatment alone for urinary incontinence in women.

MP-12.14

Can Injection of a Urethral Bulking Agent Treat Postprostatectomy Incontinence after Sling Placement?

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Introduction and Objective: Postprostatectomy incontinence (PPI) is not uncommon and significantly impacts quality of life. Patients favouring a minimally-invasive approach may have opted for insertion of a transobturator sling. Although success rates of this treatment are good, a proportion of patients experience further incontinence. This study evaluates the safety and efficacy of treating refractory and recurrent PPI with injection of a urethral bulking agent in men who have had previous transobturator sling insertion.

Materials and Methods: A review of all men with history of transobturator sling who were treated with urethral bulking agents for refractory or recurrent PPI at a single institution from May 1, 2011 through October 1, 2016 was performed. Perioperative, continence and complication outcomes were assessed. Success was defined as minimum 50% reduction in number of pads used daily. Statistical analysis included Student's t test.

Results: Twenty men with history of transobturator sling and refractory or recurrent PPI were treated with Macroplastique urethral bulking agent during the study period. Mean patient age at procedure was 66 years (range 52-80 years). Mean duration of follow up was 23 months. All patients had previous transobturator slings in place; one patient had both artificial urinary sphincter (AUS) and sling in place. Continence success was achieved in 60% of men, and continence improvement experienced by 80% of men. There was significant reduction in mean number of pads used per day from 2.4 pre-procedure to 1.4 post-procedure ($p<0.05$). 65% (13/20) of men required no further treatment for PPI, 15% (3/20) had subsequent urethral bulking agent treatment, 5% (1/20) proceeded to repeat transobturator sling insertion, and 15% (3/20) proceeded to AUS placement. 20% (4/20) of men experienced a complication. Three complications were low Clavien grade 1-2 and one man experienced postoperative acute myocardial infarction.

Conclusion: Injection of Macroplastique urethral bulking agent appears to be a safe and efficacious treatment option for refractory and recurrent PPI in men who desire a minimally-invasive approach and have had previous transobturator sling placement. Continence success rate was 60%; continence improvement rate was 80%. 65% of men required no further treatment for PPI. 20% of men experienced complications.

MP-12.15

Results from the Iberian Study with the Adjustable Transobturator Male System to Treat Male Stress Urinary Incontinence

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Introduction and Objective: To evaluate effectiveness and safety of the adjustable transobturator male system (ATOMS) to treat male stress urinary incontinence (SUI) in a multicenter study performed in Spain and Portugal.

Materials and Methods: Retrospective study on 215 men with SUI treated with the ATOMS device between November-2012 and March-2017 in 9 institutions, with no patient excluded. Continence status based on daily pad count and patient satisfaction with the procedure were primary endpoints. Clavien-Dindo complications on month-3 were secondary endpoint. PROs (VAS and PGI-Improvement) and basal urodynamics were also investigated. Factors affecting dry rate (0-1 pads) were evaluated after adjustment and at follow-up. Incontinence recurrence due to device failure and/or explantation was evaluated and Kaplan-Meier curve performed. Multivariate analysis defined the population at best success rate.

Results: After a median follow-up of 18.3+15 months and a median 1.4+1.9 adjustment the dry rate achieved was 80.5% (96.2% for mild and 75.3% moderate-severe). Daily pad test and pad use decreased from a median of 484+372.3 mL/day and 3.9+2 pads/day to 63.5+201.2 mL/day and 0.9+1.5 pads/day (both $p<0.0001$), concomitantly satisfaction rate was 85.1% (94.3% for mild and 82.1% moderate-severe) and median PGI-I after adjustment was 1.9+1.1. VAS of pain on postoperative day-1 was 2.4+2.5. Factors associated to dryness were: lesser severity of SUI ($p<0.0001$), absence of radiotherapy ($p=0.0002$) and device generation ($p=0.05$). Multivariate analysis revealed absence of radiation (OR=3.1; 1.36-7.19), mild (OR=19.6; 3.95-100) and severe (OR=2.48; 1.0-5.59) incontinence were independent predictors of dryness. Complications according to Clavien-Dindo classification presented in 15.35% (33 cases): 66.7% grade I, 12.1% grade II and 21.2% grade III. Device was explanted in 8 patients (3.7%): 1 due to inefficiency, 3 infections and 4 extrusions. Once dryness was achieved incontinence recurred in 16 cases (9.25%), either due to explant of the device or worsening of the condition after adjustment (8 cases each). Of those dry after adjustment 80.5% (67.1-88.9) were free of SUI recurrence at 36mo.

Conclusions: This study confirms ATOMS device is safe and achieves high treatment efficacy and patient satisfaction to treat SUI of any severity. Significantly better results are achieved in cases with less severe SUI and without irradiation.

MP-12.16

Continued Pelvic Floor Exercise Engagement in Patients who Undergo Orthotopic Neobladder is Poor: Time for an Adjustment of Approach

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Introduction and Objective: Radical cystectomy remains the gold standard for the management of persistent high grade or muscle invasive bladder cancer. The two standard urinary diversion methods are formation of ileal conduit (IC) and orthotopic neobladder (ONB). Pelvic floor strengthening exercises (Kegel) have long been recognised as useful in the reduction of urinary incontinence symptoms especially in women post pelvic surgery. There is new evidence emerging in its use for prevention of similar symptoms in men. As a result, Kegel exercises are often recommended post cystectomy for patients who undergo ONB. To date little evidence exists regarding compliance and continued engagement with these. We sought to assess initial and continued engagement with these exercises in a cohort of Australian patients to draw correlation with continence satisfaction post cystectomy and ONB.

Materials and Methods: Utilising the Bladder Cancer Australia's patient-led online survey, a range of quality of life (QOL) questions were asked regarding urinary continence, satisfaction post surgery and symptoms. Additionally, initial engagement and ongoing compliance with Pelvic floor exercises post surgery was queried. Results were then tabulated and comparative analysis was performed.

Results: One hundred and fifty five patients who underwent ONB responded to the survey. Initial Kegel exercise engagement was excellent with 84% of patients completing them as suggested post surgery. Continued engagement was less satisfactory. Thirty seven patients (24%) stated that they continued to complete the exercises regularly. A large proportion (59%) completed the exercises for a few months and then ceased completely or attempts them only occasionally. Regarding day-time continence, 32% were completely dry, 36% had very mild symptoms (occasional drips), and 22% had significant symptoms. Fourteen patients (9%) were completely incontinent.

Conclusion: Although initial uptake of Pelvic floor exercises is admirable, continued commitment is poor. Patient education regarding the ongoing usefulness of these strengthening regimes is required to ensure continued engagement and current methods require modification. New patient education organizations such as www.bladdercancer.org.au can help by providing contemporary information sources and support networks for patients. Additionally, ongoing long-term follow up and comparative analysis of urinary continence rates between patients who continue to engage and those that don't may help encourage more robust uptake.

Moderated ePosters Session 13 Infections & Inflammatory Diseases

Sunday, October 22
1605–1735

MP-13.01

Is Ciprofloxacin Still a Good Choice as a Prophylactic Antibiotic for TRUS and Prostate Biopsy?

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Introduction and Objectives: Post TRUS prostate biopsy infections are increasing and the choice of prophylactic antibiotics, especially quinolones, is debated due to increasing emergence of resistant bacterial organisms. Our aim is to determine the prevalence of documented infections following TRUS and prostate biopsy.

Material and Methods: Retrospective study of 821 patients who had TRUS and prostate biopsy between November 2013 and February 2017 as a day case procedure under local anaesthesia. All had antibiotic prophylaxis according to the local antibiotic guidelines (Oral Ciprofloxacin 750mg pre-biopsy followed by 5 doses of Ciprofloxacin 500mg). Seven hundred and sixty nine patients had 10 cores (Standard) biopsy and 52 patients had 20 cores (Saturation) biopsy. The mean age was 71 years (Range: 40 – 88 years).

Results: The PSA ranged from 0.3 to 2681ng/ml. (PSA <10 – 470, PSA 10-20 – 211, PSA 20 -100 - 110 and PSA >100 – 29 patients). Twenty four patients were admitted following TRUS and prostate biopsy for inpatient care. Only 10 patients had documented infections (2 – Urosepsis and 8 UTI). Other reasons for admissions were Acute Urinary Retention (5), Haematuria (5), and PR bleeding (3) and pain (1). There was no correlation between the complications and PSA level (all patients PSA <10ng/ml). Mean length of admission was 8.71 days (standard deviation 8.11), with a median of 8. For patients who had cancer, mean length of admission was 10 days (standard deviation 7.7), with a median of 10; for patients without cancer, mean length of admission was 7.42 days (standard deviation 8.63), with a median of 5.

Conclusion: Our study concluded that oral Ciprofloxacin, despite other reports, can still be used effectively as prophylaxis against TRUS and prostate biopsy infective complications. Due to the limitations of this retrospective study, we are currently carrying out a prospective study to further document the safety of quinolone use in the same procedure.

MP-13.02

Predictors for Recurrent Urinary Infections Following Percutaneous Nephrolithotomy

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Introduction and Objective: Pre-existed urinary tract infection (UTI) is often associated with large nephrolithiasis. This is the first study to evaluate the predictors of recurrent UTIs in patient's status post percutaneous nephrolithotomy (PCNL).

Materials and Methods: We retrospectively analyzed the medical records of patients with renal stones and pre-operative UTIs who underwent PCNL in one tertiary hospital from January 2010 to June 2015. Patient's demographics as well as stone composition, infected organism and post-operative recurrent UTIs within 12 months were reviewed. Fisher's exact test and logistic regression were applied for univariate analysis and multivariate analysis respectively in order to determine the predictors of post-operative UTIs.

Results: A total of 201 patients with pre-existed UTIs and large renal stones who had undergone PCNL were recruited. 118 (59%) patients were infection free while 83 (41%) patients experienced recurrent UTIs post-operatively. Escherichia coli, Proteus mirabilis and Streptococcus species were the most frequently isolated bacterial organisms pre-operatively in both groups. Using the univariate analysis, significant predictors associated with recurrent UTIs were diabetes mellitus (OR=2.109, 95% CI: 1.13-3.93, p=0.019) and stone free (OR=0.482, 95% CI: 0.269-0.865, p=0.014). In multivariate logistic regression analysis, stone free (OR=0.39, 95% CI 0.20-0.76, p =0.005), diabetes mellitus (OR=2.44, 95% CI: 1.21-4.94, p=0.005), age ≥65 (OR=2.39, 95% CI: 1.12-5.12, p=0.025), female gender (OR=2.65, 95% CI: 1.21-5.78, p=0.015) were significant predictors for recurrent UTIs. However, hypertension and BMI≥27 were not statistically significant predictors.

Conclusion: Stone free was a strong protective factor while diabetes mellitus, age ≥65 and female gender were significant risk factors for post-PCNL recurrent UTI.

MP-13.03

Urinary Tract Infection, Current Bacteriology and Antibiotic Sensitivity Patterns in Transurethral Resection of the Prostate

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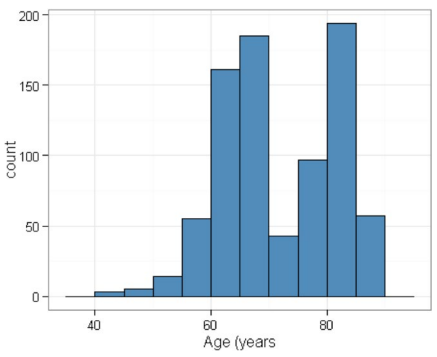
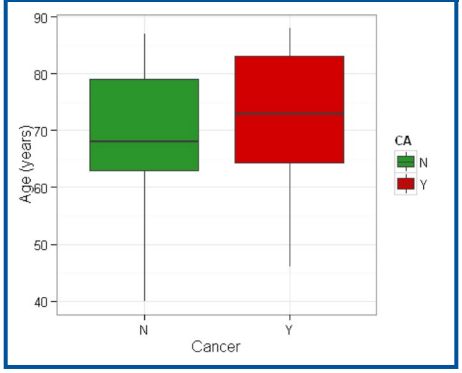
Introduction and Objective: The presence of bacteriuria in patients undergoing transurethral resection of the prostate (TURP) significantly increases morbidity and mortality. This study aims to establish the prevalence of bacteriuria in patients undergoing TURP, to identify the bacteriology of their urine, and determine the best antibiotics to administer perioperatively based on sensitivity patterns.

Materials and Methods: A descriptive cross-sectional study of 90 adult male patients who underwent TURP for benign and malignant prostatic disease was made at a tertiary government hospital in the Philippines between January 2014 and December 2015. Presence of bacteriuria based on urine cultures collected preoperatively, postoperatively upon catheter removal,

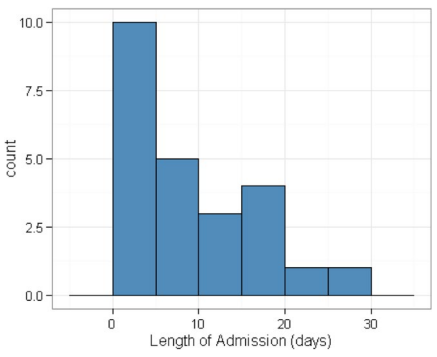
MP-13.01, Figure 1.



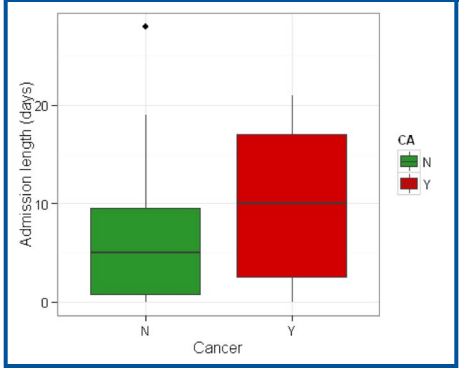
MP-13.01, Figure 2.



MP-13.01, Figure 3.



MP-13.01, Figure 4.



and 30 days post-TURP was determined. Susceptibility and resistance patterns of isolated bacteria were then evaluated against most commonly available antibiotics.

Results: Mean patient age was 67 years (range 53-83). 76 patients (84%) had benign and 14 patients (16%) had malignant prostate disease. On admission, 14 (16%) patients had concomitant stone disease; 74 (82%) patients had indwelling catheters; and 43 (48%) patients had preoperative bacteriuria. Of the 74 patients with catheters preoperatively, 39 (53%) had positive cultures. Of the 16 patients without catheters preoperatively, 4 (25%) had positive cultures. After catheter removal postoperatively, 14 (16%) patients developed positive urine cultures. Of these 14 patients, six had negative cultures preoperatively while eight had different bacterial growths from their preoperative cultures. On follow-up 30 days after TURP, 16 patients (18%) still showed positive cultures. The most common pathogen isolated was E. Coli, followed by Klebsiella, Aeromonas, Enterobacter, and Proteus. Amikacin had the highest sensitivity rate of 100% for all the bacteria tested. Carbapenems and gentamycin had 90% and 86% sensitivity rates respectively. High resistance rates were observed from norfloxacin (86%), ampicillin (84%) and cefazolin (75%).

Conclusion: There is a high prevalence of significant bacteriuria among patients undergoing TURP in our institution, which reiterates the importance of antimicrobial prophylaxis and treatment. E. coli, Klebsiella pneumoniae, Aeromonas, Enterobacter, and Proteus are the most commonly isolated organisms, and should thus be covered by prophylaxis. Amikacin, carbapenems, and gentamycin have the best sensitivity pattern for treatment of perioperative urinary tract infections.

MP-13.04

Is Quadrivalent Human Papilloma Virus Vaccine Effective in Management of Genital Warts?

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Introduction and Objective: Since mid-2006, a licensed human papillomavirus (HPV) vaccine has been available and recommended by the Advisory Committee on Immunization Practices for routine vaccination of adolescent girls at ages 11 or 12 years. Recently, HPV vaccines have also been approved for boys in several countries, including South Korea and United States. Indeed, HPV vaccine has been shown to also be effective in preventing genital warts in both sex. Currently, surgical excision is treatment choice of genital wart. To evaluate the treatment effect of genital warts, we investigated the quadrivalent HPV vaccine injection compared with surgical excision.

Materials and Methods: The prospective study included 26 patients (M:F = 24:2) who received underwent 3 times quadrivalent HPV vaccine between January 2015 and June 2016. Patients were evaluated before injection by medical history, physical examination, urine analysis, syphilis, HIV, and cystourethroscopy (if needed). After explanation of surgical excision and HPV vaccine, 16 patients underwent surgical excision and the others were quadrialent HPV vaccine injections. Based on gross findings of genital warts, treatment outcomes in vaccine injected patients were evaluated as follows: complete response (no wart), partial response, and failed treatment (no change or worsening of warts).

Results: Among enrolled patients, 42% (11/26) patients had recurrent genital warts history (HPV injection patients over 2 times, 6/10). At a mean follow up period of 8.42±3.27 months, 10 patients (100%) who received HPV vaccine did not show recurrence. Complete response rates of genital wart were 60% following 3 times HPV vaccine injection. Partial response (3 patients) wanted to excise the genital lesions before the 3 times injection, because they worried about sexual transmission of disease to their sexual partners. One patient underwent surgical excision after 3 times injection. Excision sites were the suprapubic site, but other sites including mid-urethra and glans were complete response after injection.

Conclusions: The response rate after 3 times quadrivalent HPV vaccine injection were 90% (complete and partial). Our results suggested that HPV vaccines could be effective in management of genital warts in both sex. However, further studies are needed to elucidate the real treatment effect of HPV vaccine in genital warts.

MP-13.04, Table 1.

	Surgical Excision (n=16)	HPV vaccine injection (n=10)	p-value
Sex			
M/F	15/1	9/1	0.067*
Age (year)	35.8 ± 11.2	26.1 ± 6.0	0.019†
Condyloma recurrent history			
0	11 (68.8%)	4 (40%)	0.076†
1	2 (12.5%)	0 (0%)	
≥2	3 (18.7%)	6 (60%)	
Condyloma counts			
1	3 (18.7%)	1 (10%)	0.242†
2-4	3 (18.8%)	5 (50%)	
≥5	10 (62.5%)	4 (40%)	
Complete response after injection		6 (60%)	
Surgical excision after injection		4	
No response		1	
want to excise lesions during follow up		3	

*: Mann-Whitney test
†: Fisher exact test

MP-13.05

The Effectiveness of Conservative Measures in Management of Emphysematous Pyelonephritis and the Role of Risk Factors in the Final Outcome

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Introduction and Objective: Emphysematous pyelonephritis (EPN) is a severe, rare, gas-forming infection of the kidney and its surroundings. The radiological classification and proper therapeutic regimens are still controversial, and the prognostic factors for poor outcome remain uncertain. Aim of work To follow-up the cases of emphysematous pyelonephritis (EPN) presented between December 2014 and April 2016 as regard the risk factors and prognosis after the different modalities of treatment and to identify statistical risk factors for poor outcome associated with EPN.

Materials and Methods: Clinical features, laboratory variables, imaging studies, management strategies and the final outcomes were analyzed in 31 consecutive EPN patients. We also divided our cases into "good" and "poor"outcome groups to elucidate the risk factors. The patients who were successfully treated with antibiotics alone or using percutanous drainage combined with antibiotics were assigned to the "good" outcome group which include (23 patients), While the patients who had nephrectomy or died were assigned to the "poor" outcome group which include (8 patients).

Results: The mean (SD) age was 50 (10.2) years and the male to female ratio was 4:27. Twenty five patients (81%) were diabetics. The right kidney (51.6%) was relatively more involved than the left one (41.9%). Escherichia Coli was the most common organism (54.8%) cultured, followed by Klebsiella (9.7%). There was no significant difference in final outcome based on radiological classification (Huang and Tseng). The overall survival rate was 87% (27/31) and the kidney was salvaged in 77% (24) patients. Shock, thrombocy-

topenia, and acute renal failure at presentation were not associated with higher mortality rate. There was one case of mortality in selected patients who received antibiotics alone (1/9). Of 18 patients who had minimally invasive treatment combined with antibiotics, two (2/18) died. Only one patient died after nephrectomy (1/4). Conservative management resulted in high renal salvage (89%) compared to nephrectomy (75%).

Conclusion: The proposed risk factors for poor outcome as shock, thrombocytopenia, and renal failure at presentation are NOT associated with higher mortality rates. Also, radiological classification has no impact on the final outcome. Conservative treatment provides the gold standard for initial management of EPN.

MP-13.06

Antibiotic Resistance for E.Coli Infections from >100,000 Culture Positive Urinary Specimens from a University Hospital

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Introduction and Objective: We wanted to look at the trends of antibiotic resistance patterns for all E.Coli infections over a 10-year period between 2007-2011 and 2014-2016, and to assess if there was a change in the resistance to the commonly prescribed antibiotics over this time.

Materials and Methods: The department of infection collected results of organisms from urine culture (data collated and provided by Public Health England) over this 10-year period. Trends were obtained between urine culture positive samples for period-1 (5-year period, 2007-2011) and period-2 (3-year period, 2014-2016). Resistance for E.coli infections to commonly prescribed antibiotics including trimethoprim, amoxicillin, ciprofloxacin, gentamicin and nitrofurantoin was collated.

Results: A total of 104,750 hospital urine specimens were culture positive across the two time periods over these 10-years. Although the total number of E.Coli positive urine culture results was 57061(54%), there was a significant increase in the number of coliform infections over these two time periods (3000/year in period-1 increasing to 14,000/year in period-2). The overall antibiotic resistance for E.Coli infections is as shown in the table below, with lowest resistance with Nitrofurantoin (mean of 2%) and an increasing resistance (in this order) with Gentamicin, Ciprofloxacin, Trimethoprim and Amoxicillin at 3-6%, 12-16%, 35-40% and 52-60% respectively.

Conclusions: Nitrofurantoin resistance remains low and should be considered the mainstay treatment for uncomplicated UTIs in females. Although the Gentamicin resistance has increased marginally over time, the overall resistance is still low and should be considered for prophylaxis for uro-endoscopic procedures and as a part of treatment for management of sepsis.

MP-13.07

Neuromodulation for Chronic Urogenital Pain: A Comparison of Pudendal and Sacral Nerve Stimulation

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Introduction and Objective: Little evidence exists regarding the effect of chronic neuromodulation on urogenital pain. We evaluated outcomes between pudendal vs. sacral nerve neuromodulation.

Materials and Methods: Adults in our prospective database with primary/secondary diagnosis of pelvic pain (excluding interstitial cystitis) and quadripolar lead placed at the pudendal or sacral nerve were reviewed. History, pain scores (0-10; none to severe), Global Response Assessment (GRA), Interstitial Cystitis Symptom/Problem Index (ICSIPI) and Overactive Bladder symptom severity (OABq ss)/health related quality of life (HRQOL) collected at baseline, 3 and 6 months, and 1 and 2 years were analyzed with descriptive statistics and repeated measures over 1 year.

Results: 87 had a lead placed, 72 (83%) had generator implantation and 65 had complete baseline data. 37/65 had a pudendal (12/37 had failed sacral stimulation) and 28 had a sacral lead. Characteristics were similar except for pudendal had lower body mass index (median 24.8 vs. 28.6; p=0.009) and fewer primary urinary urgency/frequency (8.1% vs. 39.3%; p=0.003). Pudendal patients more commonly had a primary diagnosis of pelvic pain that approached but was not statistically significantly (62.2% vs. 38.5%; p=0.06). Median follow up was 1.2 vs. 2.6 years in the pudendal and sacral groups respectively (p=0.0011). Median pelvic pain scores were similar between pudendal and sacral groups at baseline and each follow up, and both improved significantly over 1 year (p=0.0003 and p<0.0001). The pudendal group had lower ISCIPI and OABq/ss scores at baseline (p=0.007 and p=0.035, respectively), but both groups improved over 1 year on the ICSIPI (p<0.0001 for both groups), OABq/ss (p=0.005 and p=0.0002 respectively), and OABq HRQOL (p=0.027 and p<0.0001, respectively).

Conclusion: Both groups experienced significant improvement in pain. Pudendal was effective in those who failed sacral neuromodulation and was used preferentially in patients with a primary diagnosis of pain. Neuromodulation should be considered in the management of chronic pelvic pain.

MP-13.08

Extracorporeal Shock Wave Therapy for Chronic Prostatitis III-A-B

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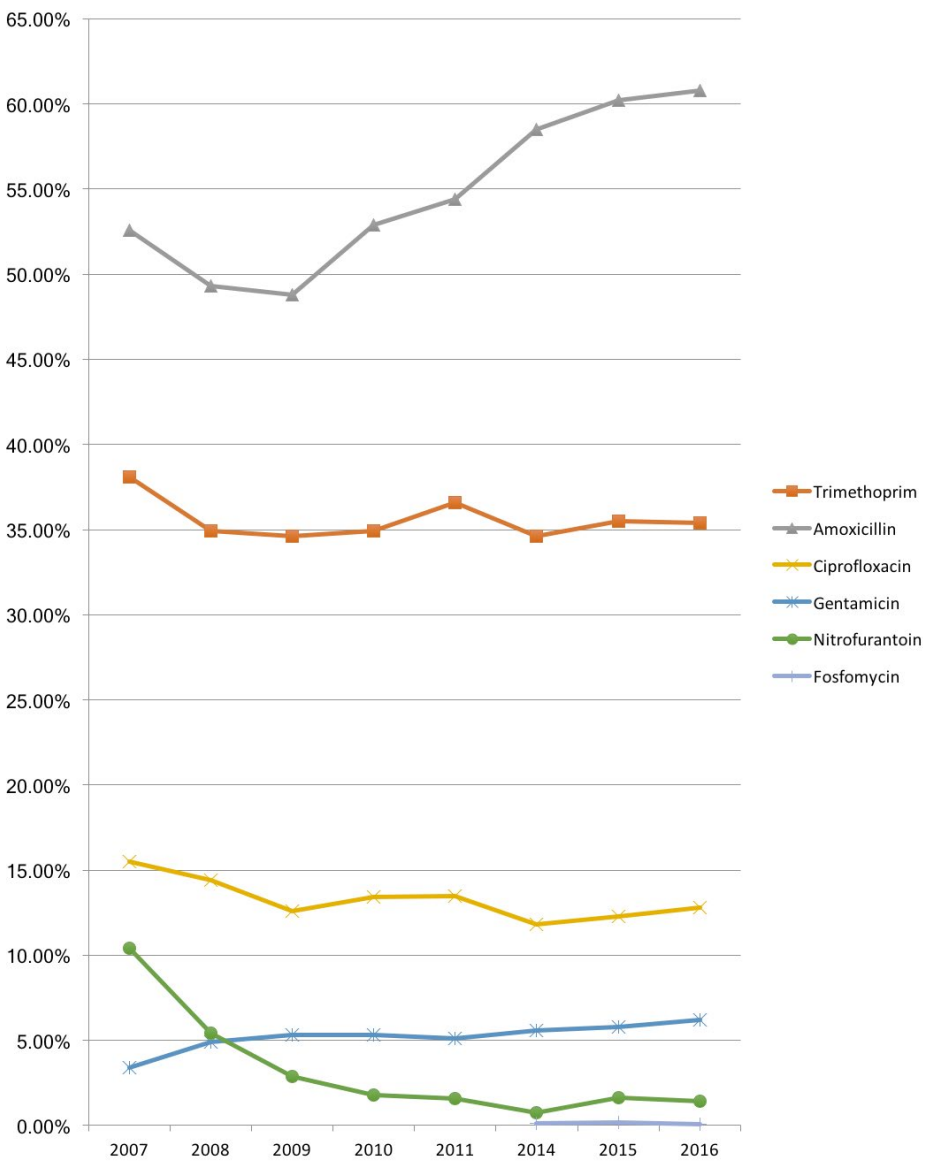
Introduction and Objective: Chronic pelvic pain syndrome (CPPS) with or without signs of inflammation (chronic prostatitis category III-a-b) is one of the most common diagnosis in urology. Insufficient results of the therapy with α-blockers, non-steroid anti-inflammatory drugs etc compel to look for alternative approach to the management of patients with CPPS.

Materials and Methods: Twenty seven patients with CPPS were enrolled in the pilot open-label non-comparative prospective study. Inclusion criteria - NIH-CPSI (National Institute of Health Chronic Prostatitis Symptom Index) score ≥15. CPPS III-a was in 7, and CPPS III-b was in 20 patients. All were treated with extracorporeal shock-wave therapy (ESWT) with Dornier Aries® (Dornier MedTech GmbH, Germany) using the smart focus technology as monotherapy by the following protocol: two procedures per week, three weeks for a complete course of total 6 procedures. Parameters of ESWT were as followed: energy level 5-7 (according to individual sensitivity), energy density 0.056-0.085 mJ/mm2, 3500 – 4000 shock waves per procedure (according to individual

MP-13.06, Table 1. Number (%) Resistance of E.Coli in Urine from UHSFT to Selected Antibiotics 2007-2016

	2007	2008	2009	2010	2011	2014	2015	2016
Number of isolates Hospital (Urology)	2901 (35)	3290 (33)	3208 (31)	3007 (40)	2883 (22)	13431	14139	14180
Trimethoprim	1004 (38.1%)	1147 (34.9%)	1109 (34.6%)	1050 (34.9%)	1054 (36.6%)	4653 (34.6%)	5020 (35.5%)	5031 (35.4%)
Amoxicillin	1527 (52.6%)	1622 (49.3%)	1564 (48.8%)	1592 (52.9%)	1569 (54.4%)	7861 (58.5%)	8518 (60.2%)	8615 (60.8%)
Ciprofloxacin	449 (15.5%)	473 (14.4%)	404 (12.6%)	402 (13.4%)	389 (13.5%)	1580 (11.8%)	1746 (12.3)	1816 (12.8%)
Gentamicin	99 (3.4%)	160 (4.9%)	170 (5.3%)	159 (5.3%)	148 (5.1%)	748 (5.57%)	820 (5.80%)	881 (6.21%)
Nitrofurantoin	300 (10.4%)	176 (5.4%)	93 (2.9%)	53 (1.8%)	45 (1.6%)	102 (0.76%)	227 (1.61%)	206 (1.45%)

MP-13.06, Figure 1. Number (%) Resistance of E.Coli in Urine from UHSFT to Selected Antibiotics 2007-2016



sensitivity). Results were estimated by NIH-CPSI on the base-line, after the last 6th procedure, and in one month follow up after finishing the therapy. Also laser Doppler flowmetry (LDF) was performed before, after finish and in one month after finish the therapy.

Results: Directly after finishing the course of ESWT all domains of NIH-CPSI decreased insignificantly: CPSI pain score from 9.1 to 7.9, CPSI voiding symptoms from 4.2 to 4.1, CPSI quality of life (QoL) score from 7.2 to 6.0, and total CPSI score from 20.5 to 18.0. Perfusion units in a zone of a prostate evaluated by LDF also remained stable. Fortunately in 1 month after finishing ESWT, we found statistically significant ($p<0.05$) values improvement in all symptoms but the urinary one, as well as evident microvascular response. In one month CPSI pain score on average was 3.2, CPSI urinary domain was 2.7, QoL – 3.9 and total CPSI score became 9.8 – twice lower; perfusion units increased to 58%.

Conclusion: Extracorporeal shock-wave therapy with Aries (Dornier) is effective for chronic prostatitis category III-a-b both by subjective (NIH-CPSI) and objective (LDF) criteria; final efficacy may be estimated at follow up not earlier than one month after finishing the treatment.

MP-13.09

Chronic Constipation Exacerbates the Quality of Life Impairment Suffered by Pre-Menopausal Women with Uncomplicated Recurrent Urinary Tract Infections

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Introduction and Objective: At least half of all women will experience a UTI at some point in their lifetime. Despite appropriate antibiotic therapy, up to 30-50% of women suffer a relapse or recurrence of UTI (RUTI) within 6-12 months. Although widely believed to cause significant morbidity, few studies have measured QOL in patients with RUTI using generic preference based measures of health. This study aims to investigate the impact on QOL of pre-menopausal women with RUTI (defined as >2 episodes /year) using the SF-36 questionnaire.

Materials and Methods: Between May 2013 and October 2016, RUTI patients, referred to the Urology department at the National University Hospital, Singapore, were prospectively recruited to fill up a SF-36 health-related quality of life questionnaire. The SF36 measures perceived health in the areas of physical function (PF), role-physical (RP), bodily pain (BP), general health (GH), vitality (VT), social functioning (SF), role emotional (RE) and mental health (MH). Patients were included if they were female, age between 21 and 60, pre-menopausal and had a symptomatic infection. Exclusion criteria included pregnancy, any urological abnormalities, systemic sepsis, or any immune-compromised state. In addition, demographic and clinical details including symptomology, bacteriology data were analyzed for factors impacting QOL.

MP-13.09, Table 1.

	Adjusted Population Reference	RUTI (all) N=85	RUTI (CC) N=13	RUTI (without CC) N=72
Physical Function (PF)	77.8	84.2	69.2±28.4	86.5±20.1 (P<0.05)
Role Physical (RP)	79.4	68.5	50.0 ±46.8	72.3±4.9 (P<0.05)
Bodily Pain (BP)	77.8	58.7	44.9±25.5	61.6±25.0 (P<0.05)
General Health (GH)	70.0	59.2	49.5±24.6	60.8±19.7 ((P<0.05)
Vitality (VT)	64.1	54.5	48.1.±27.7	55.2±16.5P P=NS
Social Function (SF)	79.3	67.8	53.8±33.6	68.8±21.3(P<0.05)
Role Emotional (RE)	79.1	63.9	43.6±47.9	65.6±41.7 P=NS
Mental Health (MH)	72..1	64.8	64.3±23.0	65.4±17.6 P=NS

Results: A total of 85 women of different ethnicities (Mean age 31.8 ± 6.8 (SD), 59% Chinese) were recruited into the study. There were no significant co-morbidities in these patients. With an average of 3 episodes of UTI/year, at least 50 % of patients suffered from E.Coli UTI. Table 1 shows that the mean SF-36 scores of RUTI patients were lower in all domains except PF when compared with local published population reference values, adjusted for age and gender. Amongst RUTI women, symptomatology of UTI episodes except fever, obesity (BMI>28), smoking, alcohol intake, previous pregnancies, and sexual activity did not significantly negatively impact on their QOl. However, RUTI women who also reported chronic constipation (CC) had significantly lower mean scores than those without in all domains except MH, RE and VT (Table 1). There was no association between constipation and number of UTI episodes per year.

Conclusion: RUTI has a negative impact on the QOL of pre-menopausal otherwise healthy women with RUTI and this is exacerbated by chronic constipation. More studies are needed to understand the relationship between these two common problems.

MP-13.10

Sodium Hyaluronate Reduces Severity and Improves Quality of Life in Bladder Pain Syndrome and Recurrent UTI

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Introduction and Objective: Bladder Pain Syndrome (BPS) is a chronic disease with persistent bladder irritation and pain. Urinary Tract Infections (UTI) will occur in nearly half of all women at least once with around 35% experiencing recurrences. Bladder mucosal glycosaminoglycan (GAG) layer damage is postulated to contribute to both conditions. Sodium hyaluronate (SH) replenishes the GAG layer and is believed to be protective. However, there is limited literature referencing patient reported outcomes and quality of life (QoL) after treatment.

Our objective was to observe changes in BPS and UTI severity and QoL after treatment with intravesical SH.

Materials and Methods: In this retrospective, observational patient-reported outcome study we divided patients into either UTI or BPS (negative urine culture with BPS symptoms). 40mg/50ml of SH were instilled weekly for six weeks. If symptoms persisted, patients were administered 120mg/50ml on demand. Questionnaires were sent to score symptoms, UTI occurrences and antibiotic usage before and after treatment.

Results: We surveyed 52 patients; 25 BPS and 27 UTI. Valid responses were 13(52%), and 15(55.5%) respectively. Mean ages were 55.9 and 68.5, In BPS, improvements occurred in 'QoL' and 'nocturia' (37%) (1.7, SD 1.8 and 1.5, SD 1.6 respectively) 'Frequency' (38%) (1.8, SD 1.5), 'urgency' (40%) (1.7, SD 1.9), 'sick time' (41%) (1.8, SD 1.7) and 'pain' (45%) (2.1, SD 1.8) The greatest improvements (51%) were in 'loss of sleep' and 'interference with life' scores (2.0, SD 2.2 and 3.0, SD 1.9 respectively). In the UTI group, improvements in pain-related 'QoL' were 23% (2.0, SD 3.2), 'urgency' 25% (2.2, SD 3.7), 'nocturia' 26% (2.3, SD 3.8), 'frequency' 29% (2.7, SD 3.6), 'loss of work' 33% (1.9, SD 3.6), 'pain' and 'loss of sleep' by 35% (2.8, SD 3.9, and 2.9, SD 3.9 respectively). Patients experienced a 44% decrease in 'patient reported UTI occurrences' from 5.8 to 3.3 (SD 3.3), a 54% reduction in 'antibiotic treatments' (3.8, SD 3.8) and a 35% improvement in 'UTI related QoL' (1.9, SD 2.8).

No adverse events occurred.

Conclusion: Intravesical SH is efficacious in BPS and UTI patients, with improvements in symptoms scores, pain, QoL and antibiotics use.

MP-13.11

Predictive Factors of Necessity of PCN Insertion on Acute Stone Obstructive Pyelonephritis

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Introduction and Objective: Acute obstructive pyelonephritis is a life-threatening infection, may lead to septic shock, renal damage and multi-organ system failure. The ureter stone is the common cause of urinary tract obstruction. Immediate empiric antibiotic and urinary drainage are the primary treatment, even percutaneous nephrostomy (PCN) tube or ureteral catheter. However, the timing or necessity of PCN insertion is not clear, and there's no relative literature in our article review. We try to figure out the predictive parameters for evaluation the necessity of PCN tube insertion amount the stones related acute obstructive pyelonephritis patients during initial analysis.

Materials and Methods: We prospectively collect the 75 patients who were diagnosed with stone obstructed acute pyelonephritis from January to December 2016 in our hospital. Thirteen patients received immediately PCN tube inserting at emergency room and they were not enrolled to our analysis because we want to figure out which factors of acute pyelonephritis patients may lead to uncontrollable or progressed disease that the further PCN tube insertion is necessary. Twenty six patients (Group 1) received PCN tube insertion later due to persistent spike fever, progressed infection or uncontrollable sepsis; 36 patients (Group 2) had no PCN drainage intervention, received only antibiotic and fluid resuscitation. Definitely treatment for the ureter stone was done after infection under controlled. Patient demographic include age, gender and comorbidities like diabetes mellitus (DM), hypertension (HTN), coronary artery disease (CAD) and cerebrovascular accident (CVA). The disease patterns were stone size, stone location and the severity of hydronephrosis. The initially analyzed data were initial blood WBC count, CRP and creatinine. Analyzed the parameters to predict PCN insertion initially or unnecessary. SPSS 17 is used for statistically method.

Results: There's statistical significant higher initial WBC in group 1 (p = 0.48) in T test. The stone size also showed significant higher in group 1 (p = 0.002). The age, CRP and creatinine showed no difference. The gender, DM, CAD, CVA, stone location and severity of hydronephrosis showed no difference between the two groups under Chi-square test, but the HTN showed statistical significant (p = 0.014). The initial WBC above 13x10^3/ul and the stone size more than 9.5mm were elective predictive value from ROC curve. The Chi-square test showed statistical significant (p = 0.038), present that the patients with CRP ≥10 had more incidence to receive PCN insertion.

Conclusion: We found that the initial WBC, stone size and CRP ≥10 are potential predictable parameters to decide the necessity of PCN insertion while the initial evaluation of the stones related acute obstructive pyelonephritis patients. We suggest that if the patients have clinical sepsis signs with more than two of these parameters (WBC ≥13x10^3/ul; stone size ≥9.5mm and CRP ≥10), urgent PCN insertion is considered.

MP-13.12

The Effect of Bladder Mangement on the Prevalence of Urinary Tract Infections in Spinal Cord Injurie Patients

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Introduction and Objective: Correct long term bladder management is the key in reducing the rate of urinary tract infection (UTI) in spinal cord injuries (SCI) patients. The aim of this study was to determine which method of bladder drainage was associated with the lowest incidence of UTI.

Materials and Methods: Data was collected on new 143 SCI patients admitted to the Victorian Spinal Cord Service. Data included patient characteristics, injury data, bladder management and diagnosis of UTI. IDC were the initial bladder management, when possible patients were converted to intermittent catheterisation (IC) or suprapubic catheter (SPC).

Results: Fifty-eight (40%) of patients developed 1 or more UTI. Fifty-one (49%) of male patients developed a UTI, whereas 7 (18%) of female patients developed a UTI. The change in incidence rate of UTI for IDC vs. long-term bladder management (IC and SPC) was 1.61 to 0.76 per 100 person-days. Removing the IDC resulted in a significant reduction in symptomatic UTIs when compared with all other bladder management. (p=0.001). The change in incidence rate of UTIs for IDC vs. IC was 1.65 to 0.83 per 100 person-days. IC resulted in a significant drop in symptomatic UTIs diagnosed. (p=0.018). The change in incidence rate of UTIs for IDC vs. SPC was 1.42 to 0.52 per 100 person-days. Changing from an IDC to an SPC also resulted in a significant reduction in symptomatic UTIs. (p=0.004).

Conclusion: This study highlights the importance of removing IDC and switching alternative long-term bladder management in SCI patients. Both IC and SPC significantly reduced the number of symptomatic urinary tract infections diagnosed.

MP-13.13

Low Anesthetic Bladder Capacity Is Associated with a Unique Mucosal Gene Expression Profile in IC/BPS Patients

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Introduction and Objective: The goal of this study was to test the hypothesis that the low capacity (≤400 ml) bladder mucosal gene expression profile represents a bladder-centric IC/BPS sub-phenotype. This hypothesis is based on data from our previously reported pilot study showing that a subset of IC/BPS patients (those with a severely diminished bladder capacity {BC; ≤400 ml}) displayed a unique gene expression profile.

Materials and Methods: Selection of female IC/BPS patient biopsy samples from our tissue bank (IRB00018552) for gene expression profiling was made on the basis of anesthetic bladder capacity. All patients had undergone therapeutic bladder hydrodistention per the AUA guideline algorithm. There were 3 groups: (1) low capacity group (BC ≤400 ml; N=13), (2) BC between 450-1500 ml (N=28) and, (3) control group (non-IC/BPS patients undergoing a pelvic reconstruction procedure; N=7). Total RNA was isolated from mucosal biopsies (per standard protocols) and assayed on whole genome microarrays (Illumina HT v4 BeadArray).

Results: Mucosal gene expression profiles differ significantly between controls and IC/BPS patients (Figure 1A). Key differences in the Epithelial Adherens Junction Signaling pathway were apparent (p = 5.14E-05) between these two groups. Among only IC/BPS patients, gene expression profiles were also significantly different between those with a low capacity compared to those with BC > 400 (Figure 1B). One striking pathway impacted in this comparison was the EIF2 Signaling (eukaryotic translation initiation factor) pathway (p = 8.2E-26). Finally, gene expression profiles in the low BC group with Hunner's lesions were significantly different from those without lesions (Figure 1C). Not surprisingly, differential expression analysis produced inflammatory disease (p = 1.46E-9) as a top classifier in this group comparison.

Conclusions: Mucosal gene expression in low anesthetized bladder capacity patients is distinct from gene expression profiles in higher capacity samples and from controls. These findings suggest low BC patients, with or without Hunner's lesions, represent a sub-phenotype of IC/BPS and these gene expression differences, if confirmed, may yield additional therapeutic targets for this bladder-centric phenotype.

MP-13.14

The Impact of Treatment with Serenoa Repens on Prostatic Inflammation: Primary Results from a Randomized Controlled Trial

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[1]Dept. of Urology, General Hospital of Larissa, Larissa, Greece; [2]Dept. of Pathology, University Hospital of Larissa, Larissa, Greece; [3]Dept. of Urology, University Hospital of Larissa, Larissa, Greece

Introduction and Objectives: The aim of this study was to evaluate the impact of Serenoa Repens in men with prostatic inflammation diagnosed with prostatic biopsies.

Materials and Methods: Patients with prostatic inflammation histologically confirmed by prostatic biopsy due to elevated PSA, and/or positive digital rectal examination, were randomized into two Groups. Group A received Serenoa Repens 320mg per day for six months while no therapy was given to Group B. The prostatic inflammation was estimated and graded according to the Irani's score for both the histologic inflammation grading (extension of inflammatory cells, range 0-3) and aggressiveness (the effect of inflammatory cells on prostate tissue, range 0-3). Inflammation was reassessed in patients who underwent repeat prostate biopsy at six months. The statistical analysis, using SPSS v21.0, was based on the Wilcoxon Test. The study was approved by the Ethical Committee of the University Hospital of Larissa and registered in the Australian and New Zealand Clinical Trial Registry.

Results: Overall 110 men were enrolled and 97 of them completed the study. Thirteen patients were excluded because prostatic cancer was found at the repeat biopsy. Group A included 49 patients (mean age 71.4 years, range 56-77), while Group B had 48 patients (mean age 68.7 years, range 58-74). The mean inflammation grading score for Group A was 1.54 (range: 1-3) at first biopsy and decreased to 0.6 (range: 0-2) after therapy with Serenoa Repens. The mean aggressiveness grading score was 1.56 (range: 0-3) and 0.89 (range: 0-2) after the first and second biopsy, respectively. The decrease in both scores was statistically significant (p<0.001 and p=0.001, respectively). In Group B, the mean inflammation grading score was 1.43 (range: 1-3) at first biopsy, and 1.1 (range: 0-2) at the second biopsy. The mean aggressiveness grading score for this Group was 1.08 (range 0-3) and 0.9 (range 0-2) at first and second biopsy, respectively. No statistically significant difference was found between those scores (p=0.08 and p=0.7 respectively).

Conclusion: Treatment with Serenoa Repens seems to reduce prostatic inflammation. The clinical implication of this finding needs to be investigated.

MP-13.15

Three versus Six Hours Prostate Concentration of Fosfomycin Trometamol before Prostate Biopsy Administration: Results of a Prospective Randomized Trial

Saleh O[1], Gacci M[1], Novelli A[2], Mazzei T[2], Vanacore D[1], D'Elia C[3], Cerruto MA[4], Nesi G[5], Santi R[5], Spatafora P[1], Tasso G[1], Finazzi Agrò E[6], Cai T[7], Serni S[1]

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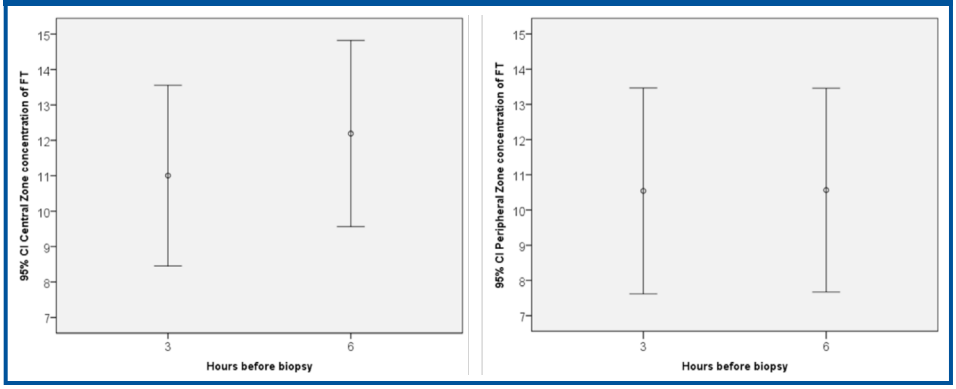
Introduction and Objective: The Fosfomycin trometamol (FT) urinary distribution is well known but regarding its concentration in prostate tissue only few and old papers are present in literature. Aim of our prospective randomized study is to evaluate prostatic concentration of FT at different times of administration before prostatic biopsy.

Materials and Methods: Sixty men with suspected prostate cancer (PCa) were prospectively enrolled in 2016 and randomized in 2 groups based on timing of administration of FT: 3h (30 P.ts) vs. 6h (30 P.ts) before biopsy. A blood sample (bs) and bioptical samples (central zone [BC] and peripheral zone [BP]) were collected by all patients. We evaluated the correlation between concentrations of FT in bs, BC and BP and clinical features, prostatic glands characteristics and histologic data with a Sperman correlation coefficient in the whole population and in 3h vs. 6h subgroups. Moreover, the differences between 3h and 6h were investigated with Anova.

Results: BC, BP and bs were not related with age, prostate volume and PSA, histologic outcomes (PCa, BPH, inflammation), in the whole population and in both 3h and 6h subgroups: all p>0.05. After administration of FT the distribution inside prostate (BC vs. BP) were comparable. Both BC and BP were related with bs (r=0.353, p=0.006 and r=0.463, p<0.001 respectively). We did not report differences between 3h and 6h in all items analyzed at the ANOVA, in particular regarding FT concentrations in bs (36.13 vs.

MP-13.15, Figure 1.



31.32, p=0.239), BC (11.00 vs. 12.19, p=0.510) and BP (10.54 vs. 10.56, P=0.991).

Conclusions: Prostatic concentrations of FT are homogeneous in both central and peripheral zone. Plasmatic concentration of FT seems to be the single determinant of its intra-prostatic concentrations. The administration of FT can be performed 3 or 6 hours before biopsy with the same tissue concentrations. Further RCT's are needed to confirm our data.

MP-13.16

Characteristics and Outcomes of Women Presenting to a Multidisciplinary Women's Urology Clinic

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Introduction and Objectives: We report on women with a variety of pelvic floor conditions managed in a comprehensive multidisciplinary Women's Urology Center (WUC) that offers urological, gynecological, colorectal, psychological, pelvic floor physical therapy and integrative medicine treatments.

Materials and Methods: Women presenting 2011-2015 were reviewed. Descriptive statistics were performed. A mailed survey to patients presenting in 2013-2014 assessed current status and satisfaction with treatment. Baseline and follow up Pelvic Floor Distress Inventory (PFDI-20) overall and subscale scores (Pelvic Organ Prolapse Distress Inventory (POPDI-6), Colorectal and Anal Distress Inventory (CRADI-8) and Urinary Distress Inventory (UDI-6)) were analyzed.

Results: Six hundred and ninety three new patients were seen in the specified time period. Mean age was 51 (range 17-91). Chief complaints were pelvic pain (219/687, 32%), urine incontinence (110/687, 16%), and overactive bladder (75/687, 11%). WUC treats women with complicated pelvic floor issues, provides 30-90 minute appointments including multidisciplinary care, yet even with this careful, tailored personal management only 89/567 (16%) patients returned the follow up survey. Eighty five percent (71/84) of responders were satisfied with the care and 35% (31/88) were still managed at the WUC. Of those who did not return, 44% (19/43) were improved / satisfied and did not need to return, 49% (21/43) had logistical reasons (live out of area, insurance issues, or inconvenient appointment times) and only 7% (3/43) were unhappy with their care. Compared to the entire group survey respondents had similar age and chief complaint, were more educated (p=0.02), but were less likely to smoke (p<0.01) or have anxiety (p=0.04) Common treatments included pelvic floor physical therapy (55%), pelvic floor trigger point injections (15%), medications (24%), and coping strategies (58%). Mean PFDI-20 scores improved (82 to 64), all subscale scores improved (POPDI-6 from 24 to 17, CRADI-8 from 19 to 17 UDI-6 from 37 to 29).

Conclusion: Complex pelvic floor issues are difficult. Many patients were outside our catchment area, had seen multiple providers and were refractory to standard therapies. Although survey response was low, the majority of patients were pleased with their care. A multidisciplinary clinic providing individualized, comprehensive care is effective for pelvic floor symptoms.

MP-13.17

Analyses of Inflammatory Urine Markers in Patients with Interstitial Cystitis and Overactive Bladder

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Introduction and Objective: Chronic inflammatory condition seems to be a shared characteristic in patients with interstitial cystitis (IC) and overactive bladder (OAB). Thus, we measured forty inflammatory urine markers in IC patients with or without Hunner lesions (HIC and NHIC, respectively) and OAB patients.

Materials and Methods: Urine was collected from 30 HIC consecutive patients, 30 NHIC patients and 28 age and gender-matched OAB patients with no history of IC, recurrent urinary tract infection or bladder cancer. The diagnosis of IC was based on the Asian IC guideline criteria. Representative forty inflammatory growth factors, cytokines and chemokines in urine were measured by MILLIPLEX immunoassay kit. Statistical differences in these markers among the groups were determined by non-parametric ANOVA followed by multiple comparison tests. The diagnostic efficiency of these markers was measured using receiver operating characteristic analysis.

Results: Vascular endothelial growth factor (VEGF), interleukin-1α (IL-1α), IL-6 and chemokines including CCL2, CCL5, CXCL1/2/3, CXCL8 and CXCL10 were significantly increased in HIC and NHIC patients compared with OAB patients. The significant increases in CXCL8 and CXCL10 were also found in HIC patients compared with NHIC patients. However, there were no significant differences in the other urine markers among the groups. Area under the curves (AUCs) for VEGF, CXCL10, CXCL8, IL-1α, CCL5, CCL2, IL-6 and CXCL1/2/3 to detect IC in these patients were 0.87, 0.86, 0.81, 0.80, 0.80, 0.71, 0.66 and 0.50, respectively (Table 1).

Conclusion: Our results have shown that IL-1α, IL-6, CCL2, CCL5, CXCL1/2/3, CXCL8 and CXCL10 were significantly increased in IC patients compared with OAB patients, suggesting that chronic inflammatory changes in IC patients are more severe than those in OAB patients. In addition, the increases in angiogenesis-associated proteins such as VEGF and CXCL10 may pathophysiologically be important for the development of IC.

MP-13.18

Differential Diagnosis of Prostate Tuberculosis

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Introduction adn Objective: Diagnosis of urogenital tuberculosis (UGTB), especially on its early stages, when there are no cavities, is very difficult. Clinical features are non-specific and similar ones in chronic prostatitis. So the base for early diagnosis is identification of Mycobacterium tuberculosis (Mtb) and specific pathomorphology in prostate biopsies.

Materials and Methods: A total of 83 patients (age from 36 to 72 years) with prostate tuberculosis (n=45; prostate TB group) and chronic prostatitis (n=38; chronic prostatitis group) were included in the study. All patients were admitted in Novosibirsk TB Research Institute between 2006 and 2014. Laboratory tests, ultrasound and radiological examinations, standard 6-12 cores prostate biopsies were done for all of them.

Results: Among the patients with prostate TB 66.7% had active TB of another localizations (lung, urinary system, scrotum, bones, lymph nodes), and 8.9% were cured from pulmonary TB. 7.9% of the patients with chronic prostatitis had also active pulmonary TB, and 15.7% were cured from pulmonary TB. In the group of prostate TB Mtb was found in ejaculate in 35.5% and twice rarely – in expressed prostatic secretion. In the group of chronic prostatitis Mtb was not found at all. Clinical features (pain, frequency, urgency, erectile dysfunction) were similar in both groups. Leukospermia was detected with the same frequency in both groups (39.5% vs 41.4%), but hemospermia was detected significantly more frequent in patients with prostate TB (22.2% vs 7.8%; p<0.05). Ultrasound investigation showed large calcifications (28.8% vs 7.9%; p<0.02), hyperechogenic fibrosis (71.1vs 47.4%;

MP-13.17, Table 1. Receiver Operating Characteristic Analysis for Inflammatory Urine Markers

	AUC	Cutoff value [pg/ml]	Sensivity [%]	Specificity [%]
VEGF	0.87	23.8	76.7	82.1
CXCL10 (IP10)	0.86	9.6	83.1	78.6
CXCL8 (IL-8)	0.81	11.2	67.9	81.5
IL-1a	0.80	1.7	68.3	77.8
CCL5 (RANTES)	0.80	9.8	70.0	77.8
CCL2 (MCP-1)	0.71	—	—	—
IL-6	0.66	—	—	—
CXCL1/2/3 (GRO)	0.50	—	—	—

p<0.05) and seminal vesicles lesion (17.7% vs 2.6%; p<0.05) more frequently in prostate TB patient. Pathomorfology of prostate biopsy confirmed TB in 20% of patients in the group of prostate TB.

Conclusion: The diagnostic of prostate TB is difficult and based on Mtb detection, pathomorfology, radiological examination and patient history (TB in another localizationsin present or past). But in the absence of specific symptoms indirect sign, such as large calcifications, hyperechogenic fibrosis in prostate, seminal vesicles lesion and hemospermia must be taken into account.

Moderated ePosters Session 14 Kidney & Ureteral Cancer

Sunday, October 22
1605–1735

MP-14.01

TP53 p.R337H Germline Mutation Analysis in Patients with Clear Cell Renal Cell Carcinoma

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Introduction and Objective: Most cases of Renal Cell Carcinoma are classified as esporadic tumor. Clear Cell is the most frequent subtype (80-90%). Hereditary syndromes related to a greater chance of developing kidney cancer are responsible for 3% to 5% of the cases but this number is subestimated. Ten syndromes and 12 genes related to kidney cancer have been described until this date. In the Brazilian population, an especific mutation on the tumoral supressor gene p53 has been identified (p.R337H) related to Li-Fraumeni Syndrome, which is associated with an early onset of tumors. The main purpose of this study is to evaluate the presence of the germinative mutation p.R337H in the gene p53 in patients with Renal Cell Carcinoma Clear Cell subtype.

Materials and Methods: Patients that went throught partial or radical nephrectomy between 2008 and 2014 in our institution (AC Camargo Cancer Center, Sao Paulo, Brazil), and the tumors were classified as Renal Cell Carcinoma Clear Cell subtype were included in this study. The p.R337H mutation was investigated by PCR-RFLP specific to TP53 exon 10 and confirmation sequencing was performed by the Sanger method.

Results: Two hundred and five samples were evaluated and only one (corresponding to 0.5 %) presented p.R337H mutation.

Conclusions: This study attempted to correlate the Li- Fraumeni syndrome with renal cancer, leading to future researches to understand the hereditary syndromes related to renal cancer, even though the data in this project exclusively cannot corralate the studied mutation and development of kidney cancer clear cell subtype .

MP-14.02

COL23A1 Plays an Oncogenic Role in the Clear-Cell Renal Cell Carcinoma

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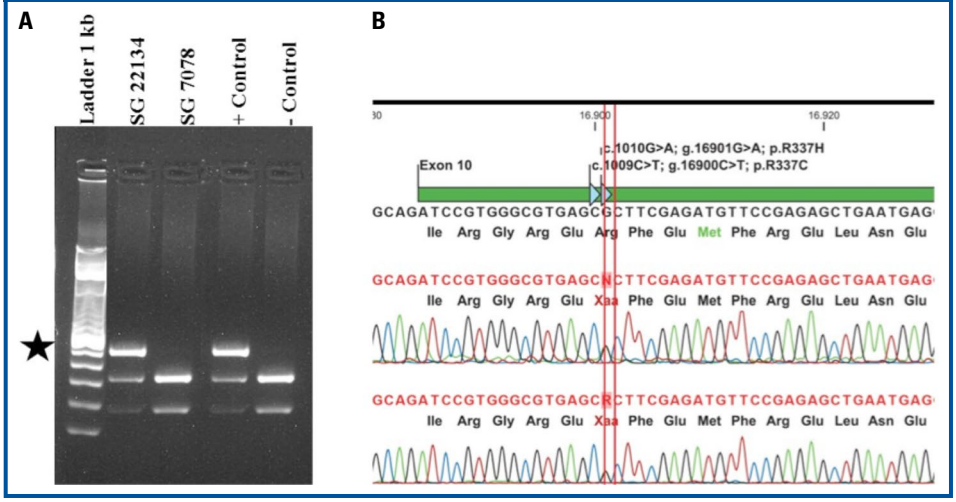
Introduction and Objective: Clear cell renal cell carcinoma (ccRCC) is the most common adult renal neoplasm and its incidence is still rising steadily. Collagens shift is a fundamental element contributing to

MP-14.01, Figure 1.



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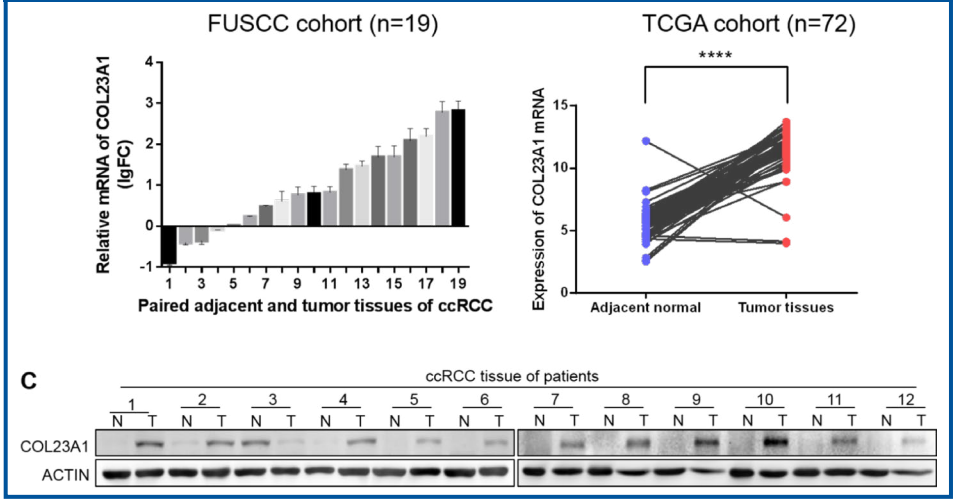

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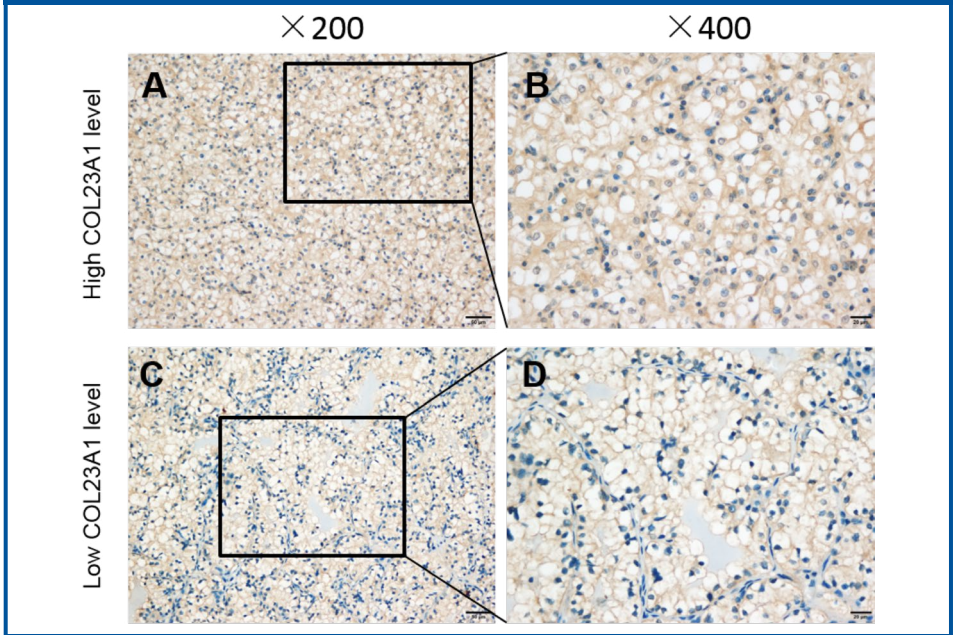

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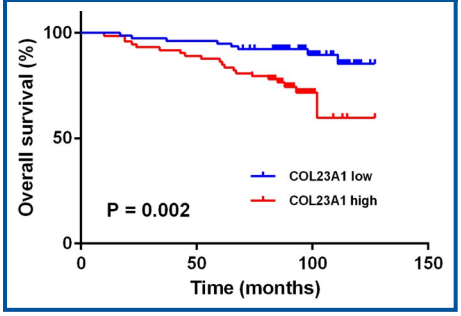


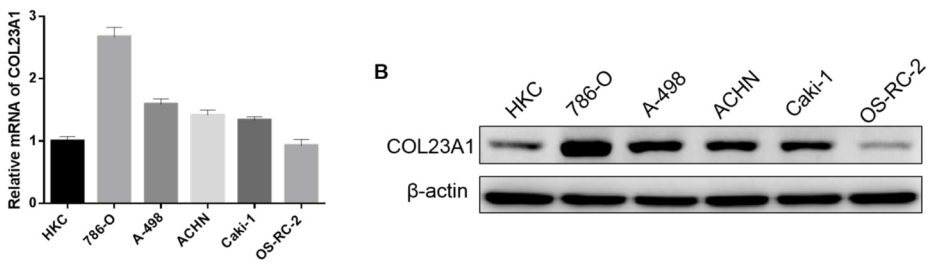
the development and progression of ccRCC. We aim to examine the expression of COL23A1 in ccRCC and the relationship betweenCOL23A1 levels and patient survival.

Materials and Methods: We detected the mRNA expression of COL23A1 in tumorous pairs and adjacent normal tissues (ANTs) of 19 ccRCC patients by quantitative real-time polymerase chain reaction and subsequently validated by TCGA database. The protein level of COL23A1 expression in 151 cases of ccRCC was evaluated by immunohistochemistry (IHC). We analyzed the correlation between COL23A1levels and clinical outcomes. Finally, CCK-8 cell counting assay, flow cytometry analysis of cell cycle and migration assay were analyzed in ccRCC cell lines.

Results: COL23A1 mRNA expression was significantly greater in tumor tissues than in ANT which was further validated by TCGA database analysis. IHC results suggested that high COL23A1 expression was correlated with larger tumor size (P = 0.017) and advanced T stage (P =0.011). The overall survival was shorter for patients who had tumors with high COL23A1 expression than for those with low COL23A1 expression (P =0.002). In the multivariate analysis, high COL23A1 expression was an independent prognostic factor of OS (HR: 3.024, P = 0.017). In vitro experiments showed that COL23A1 knockdown could repress proliferation by blocking cell cycle progression. The migration ability was also down regulated by knocking down of COL23A1.

Conclusion: Our data indicate that COL23A1 may be a novel prognostic indicator in ccRCC and may be a specific and accessible biomarker as well as a potential new target for ccRCC clinical diagnosis.

MP-14.02, Figure 4.



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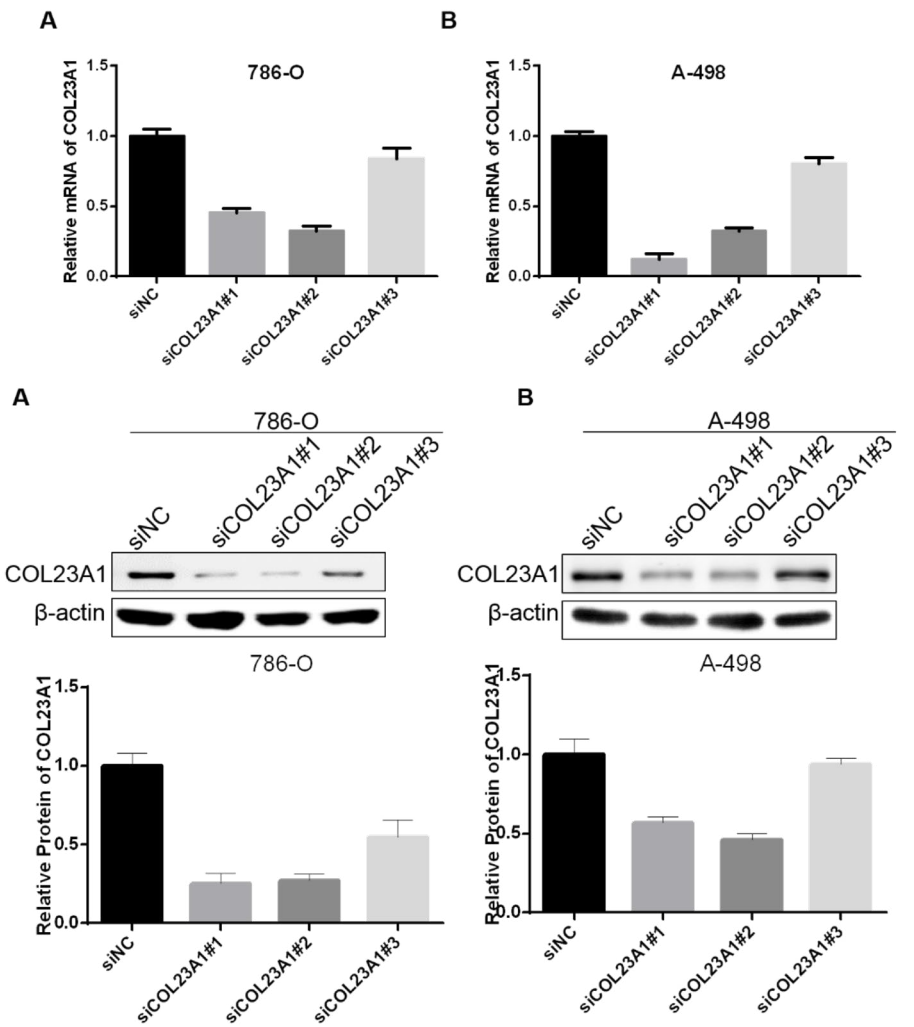

MP-14.03

Renal Masses at Presentation: Clinical and Treatment Patterns Among Continents

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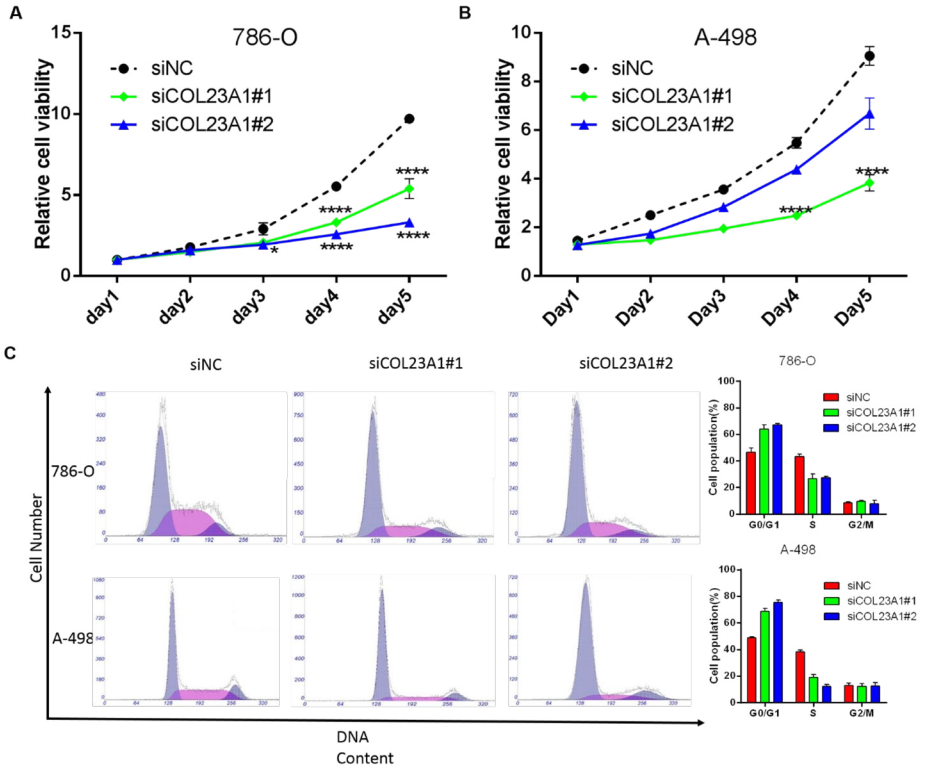
Introduction and Objective: Little is known about differences in patterns of presentation of renal masses among continents. The objective is to describe differences at presentation and in treatment among continents in a contemporary population with renal masses.

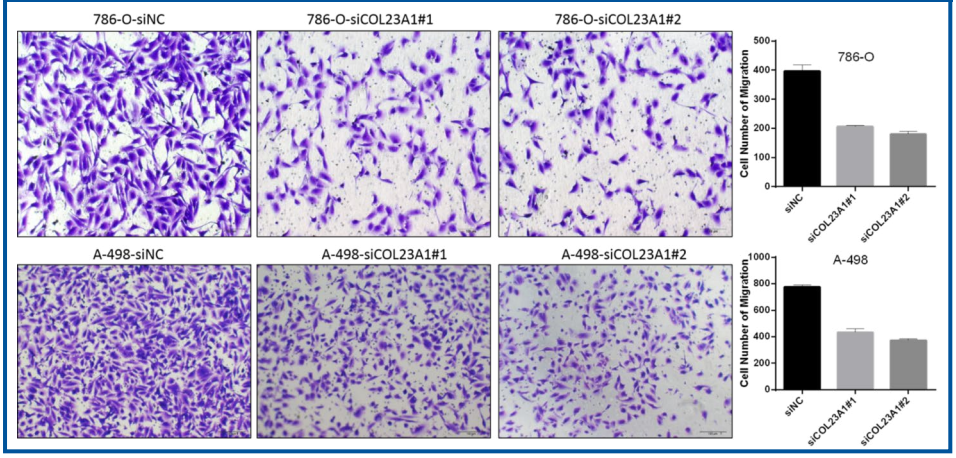
Materials and Methods: All cases ≥18 years included in the prospective CROES Renal Mass registry were selected according to the continent in which they were treated for their renal mass (n=4274). Demographic characteristics were extracted at first time patient's inclusion. 2009 TNM classifications were used to assign clinical and pathologic stage. Treatment modalities and pathological characteristics were compared among continent and for those that received surgery.

Results: Most patients were treated in Europe (3012), followed by the Americas (913) and Asia (349). Median age was lowest for Asia (57 [interquartile range (iqr):45.0-66.0]) compared to Europe and the Americas (63 [iqr: 54.0-71.0] and 62 [iqr: 53.0-71.0]). Ratio male: female was 1.8:1 for Europe and Asia, and 1.6:1 for the Americas. Median BMI and comorbidity were highest for the Americas (28.2 [iqr: 25.2-32.1], 74.6%) and lowest for Asia (23.8 [iqr: 21.6-26.1], 47.4%). Hypertension was the most frequent comorbidity overall. Multiple comorbidity was highest in Europe and the Americas (27.3%) Risk factors for RCC and

MP-14.02, Figure 6.



MP-14.02, Figure 7.



incidental finding were also highest for the Americas (48.2%, 77.4%). Smoking was the most common risk factor overall. Chronic kidney disease stage ≥III ranged from 21.5% in Europe to 25.0% in the Americas. Median clinical tumor size (mm) ranged from 35 (the Americas) to 54 (Asia). Clinical T1a ranged from 79.8% (Americas) to 62.9% (Asia). Actively surveillance was most common in the Americas (10.8%) compared to Europe and Asia (1.7%). Radical nephrectomy was more frequently employed in Asia (61.6%), and nephron sparing surgery in the Americas (64.6%). Median pathological tumor size (mm) ranged from 40 (the Americas) to 50 (Asia). pT1 tumors ranged from 74.8% for the Americas to 59.2% for Asia.

Conclusion: Although patients in the Americas exhibited higher BMI, percentage in comorbidities, risk factors, and CKD stage ≥III; tumor size and stage were lower compared to Europe and Asia. The highest Incidental tumor diagnostic was reported in the Americas.

MP-14.04

Differences in Clinical and Pathological Characteristics Between Patients with Small Renal Masses (T1a) and Larger Renal Masses

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Introduction and Objectives: Primary objective was to assess clinical differences between patients presenting with a SRM (cT1a) (≤4 cm) and larger renal masses (≥cT1b) (>4 cm). Secondary objective was to assess patient characteristics differences between pT1a and ≥pT1b RCCs.

Materials and Methods: Patients prospectively collected between Jan 2010 and Feb 2012 in the CROES Renal Mass registry with cT1a (n=1713) and ≥cT1b group (n=1819) Nx-o Mo were included in the study. The RCC pT1a and ≥pT1b cohorts consisted of 1194 and 1380 patients respectively. The 2009 TNM classification stage was used. Age, gender, ethnicity, BMI, comorbidity (hypertension, cardiac disease, diabetes, and 'other' comorbidities), risk factors, and history of RCC were compared between the two cohorts. Pearson's chi-square analysis and t-tests were used for analyses.

Results: Patients with a cT1a tumor were more often Caucasian (p=0.049), had more often 'other' comorbidities (p=0.001), and presence of risk factors (p=0.002). Median pre-operative Creatinine value was lower in the cT1a cohort (p=0.032) and more cases had advanced CKD stage (≥III) in the ≥cT1b cohort (p=0.002). In the cT1a cohort the tumor was predominantly discovered as an incidental finding compared to ≥cT1b a (83.8% vs. 62.1% p<0.001). A solitary kidney was more frequently encountered in the cT1a cohort. No differences were found for other clinical characteristics. From cT1a cases 13.9 % were pathologically upstaged mostly to pT3a. Conversely 13.8% of ≥cT1b cases were pathologically downstaged to pT1a. Patient characteristics comparison between RCC pT1a vs. ≥pT1b showed a significant difference for risk factors (p=0.014), advanced CKD (p=0.018), incidental finding (p<0.001), and solitary kidney (p=0.002). Furthermore, a significant difference was observed between pT1a and ≥pT1b for mean age (60.0 vs. 61.7, p=0.001).

Conclusion: Differences between cT1a and ≥cT1b tumors were found for ethnicity, 'other' comorbidities, and pre-operative Creatinine values. Both clinical and pathological differences were found between T1a and ≥T1b tumors for risk factors, advanced CKD, incidental finding and solitary kidney. RCC patients in the pT1a cohort were younger than in the ≥pT1b cohort.

MP-14.05

The Role of Renal Biopsy in Management of Small Renal Masses

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Royal Free Hospital, London, United Kingdom

Introduction and Objective: The management of small renal masses (SRMs) has been assisted by the

MP-14.02, Table 1. Clinicopathological Characteristics in Relation to COL23A1 Expression Status

Variable	Entire group (n=151)	COL23A1 expression		*P* value
		Low expression (n=65)	High expression (n=85)	
Age at surgery (year)				0.316
≤50	62	29	33	
>50	89	49	40	
Sex				0.420
Female	51	24	27	
Male	100	54	46	
Tumor size (cm)				0.017
≤4	103	60	43	
>4	48	18	30	
ECOG				0.286
0	127	68	59	
1	24	10	14	
T stage				0.011
T1	124	70	54	
T2-T4	27	8	19	
ISUP grade				0.877
1	32	16	16	
2	92	49	43	
3-4	27	13	14	
Necrosis				0.914
Absent	141	73	68	
Present	10	5	5	

ISUP, International Society of Urological Pathology.

MP-14.02, Table 2. Univariate and Multivariate Cox Regression Analyses of OS in 151 Ccrcc Patients

	Univariate analysis		Multivariate analysis	
Covariates	**HR (95%CI)**	**P value**	**HR (95%CI)**	**P value**
Age at surgery (>50 vs≤50)	1.034(0.484~2.211)	0.930	-	-
Sex (Male vs Female)	1.174(0.530~2.603)	0.692	-	-
Tumor size (>4vs≤4)	**3.437(1.623~7.280)**	**0.001**	1.563(0.629~3.879)	0.336
ECOG (1vs 0)	**6.259(2.918~13.426)**	**0.000**	**4.762(2.093~10.836)**	**0.000**
T stage (T2-4 vs T1)	**6.449(3.034~13.707)**	**0.000**	**2.724(1.016~6.995)**	**0.037**
ISUP grade (2 or 3-4 vs 1)	**2.944(1.561~5.552)**	**0.001**	**2.077(1.103~3.910)**	**0.024**
Necrosis (Present vs Absent)	**4.628(1.747~12.262)**	**0.002**	2.277(0.738~7.019)	0.152
COL23A1 expression (High vs Low)	**3.459(1.494~8.012)**	**0.004**	**3.024(1.221~7.489)**	**0.017**

increased use of renal mass biopsy (RMB) which can avoid unnecessary surgical intervention.

Materials and Methods: This is a prospective study from a single high-volume specialist renal cancer centre of 266 patients with RMB performed on SRMs ≤ 4cm in diameter between October 2014 and December 2016. Patients were counselled and offered RMB if technically feasible. If initial histopathology was non-diagnostic, then repeat RMB was offered. RMB under US guidance was used in 80% (n=214) of cases. RMBs were reported by a specialist uro-pathologist and discussed in sMDT.

Results: The first biopsy was diagnostic in 80% (n=213) of cases. Of non-diagnostic biopsies, 24 patients underwent a second biopsy with 88% being diagnostic, giving a combined overall RMB yield of 89%. Benign histology accounted for 28% (n=75) of patients with all cases choosing surveillance and avoided active intervention. RMB added 26 days to the diagnostic pathway. Complication rate was 3% (n=9) and were all <Clavien 3.

Conclusions: We present the largest UK series of RMBs that show a high diagnostic accuracy and low morbidity. The use of RMBs avoided unnecessary intervention in over quarter of patients that underwent investigations into their SRMs.

MP-14.06

Long-Term Outcomes Following Laparoscopic Radiofrequency Ablation for T1a Renal Cell Carcinoma

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Introduction and Objective: Few studies report long-term outcomes of renal cell carcinoma treated by radioFrequency ablation (RFA). We reviewed our experience with cT1a renal masses treated with laparoscopic RFA.

Materials and Methods: A total of 62 patients with cT1a renal masses treated between January 2005 and October 2014 were identified from a retrospective review. Patients with biopsy confirmed T1a renal cell cancer and a follow up period > 48 months were included in our analysis. Local recurrence, metastasis, survival rate and change in glomerular filtration rate (GFR) were analyzed. The definition of early follow up for GFR is that after surgery.

Results: The mean (range) follow-up for the laparoscopic RFA was 54.2 (26-97) months. The respective mean tumor size was 2.14 (± 0.66). The GFR was not significantly different at early follow up, but there was significantly different at last follow up. There were not local recurrences, metastasis and disease-specific deaths. The 5-year overall survival was 98%, cancer-specific survival was 100%, and recurrence-free survival was 100%.

Conclusion: This data showed that laparoscopic RFA for cT1a renal masses has comparable oncological and functional outcomes.

MP-14.07

The Predictive Value of Preoperative De-Ritis Ratio (AST/ALT Ratio) in the Renal Cell Carcinoma Patients – Multicenter Study

Jeong HC[1], Kang S[1], Moon HW[1], Lee KW[1], Choi SW[1], Bae WJ[1], Cho HJ[1], Ha US[1], Lee JY[1], Kim SW[1], Byun SS[2], Kwak C[3], Kim YJ[4], Hwang EC[5], Kim TH[6], Kang SH[7], Chung J[8], **Hong SH**[1], Seo SI[9], Kim SH[10]

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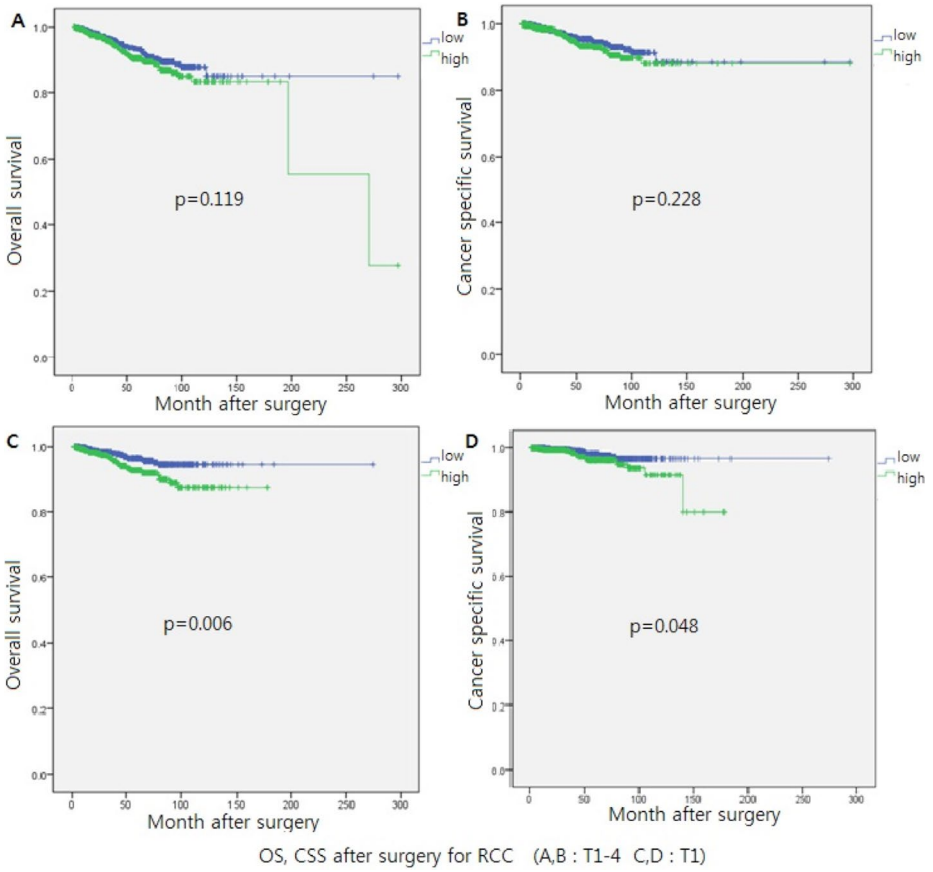
MP-14.07, Figure 1.



MP-14.08, Table 1. Patients' Characteristics and Comparative Analysis Results According to BMI Classification

Variables	Normal (BMI ≤22.9) (n=705)	Over-weight (23.0≤BMI≤24.9) (n=648)	Obesity (BMI≥25) (n=976)	p-value
Preoperative clinical parameters				
Symptomatic presentation, n (%)				0.001
Asymptomatic	536(76.0%)	509(78.5%)	811(83.1%)	
Symptomatic	169(24.0%)	139(21.5%)	165(16.9%)	
Age at surgery, years, median (IQR)	55 (45-66)	55 (47-65)	57 (49-65)	0.160
Gender, n (%)				<0.001
Male	431(61.1%)	471(72.7%)	744(76.2%)	
Female	274(38.9%)	177(27.3%)	232(23.8%)	
BMI(kg/m2), median (IQR)	21.4 (20.2-22.2)	24.0 (23.4-24.5)	26.9 (25.8-28.4)	<0.001
Preoperative Hb (g/dl), median (IQR)	13.3 (12.0-14.5)	14.1 (12.9-15.1)	14.3 (13.1-15.4)	<0.001
Preoperative serum Cr (mg/dl), median (IQR)	0.92 (0.80-1.10)	1.00 (0.85-1.10)	1.03 (0.88-1.11)	<0.001
Smoking status at diagnosis, n (%)				0.053
No	608(86.2%)	549(84.7%)	800(82.0%)	
Yes	97(13.8%)	99 (15.3%)	176(18.0%)	
PBT, n (%)				0.002
No	598(84.8%)	573(88.4%)	883(90.5%)	
Yes	107(15.2%)	75 (11.6%)	93(9.5%)	

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Introduction and Objective: There are some recent researches that suggest De-ritis (AST/ALT ratio) ratio, which had been performed before the surgery of renal cell carcinoma (RCC), could affect the prognosis but it is still controversial. Through the research, we analyzed the value of preoperative De-ritis ratio as a predictive factor in RCC.

Materials and Methods: From 1988 to 2015, we retrospectively collected data from 7271 patients surgically treated for non-metastatic RCC from 8 centers. ROC curve was analyzed to calculate the cut-off value of AST/ALT as a predictive factor of RCC. The highest Youden index was shown in 1.21 and the patients were divided into two groups. After calculating the propensity score, it was matched to 966 and 966 patients respectively. Kaplan Meyer analysis, Multivariative Cox analysis were performed to identify overall survival (OS), cancer specific survival (CSS), Recurrence free survival (RFS).

Results: In propensity score matched cohort, there were no statistical difference between the age, sex, DM, HTN, ECOG score, tumor size, and symptom status. There were no statistical different in OS, CSS, and RFS between two groups (p=0.119, 0.228, and 0.389 respectively). Multivariative Cox analysis showed that Hazard ratio of OS, CSS, and RFS were 1.236, 1.255, and 1.089 respectively but there were no statistical significance. (p=0.245, 0.327, 0.458 respectively). As a subgroup analysis, we analyzed Kaplan Meier survival analysis based on T stage. In case of T1 showed that high De-ritis ratio showed significant relationship with poor OS, and CSS and it was statistically significant. On the other hand, in the case of T2, 3, and 4, they did not show statistical significance as a predictive factor.

Conclusion: Preoperative AST/ALT (De-ritis) ratio in RCC patients showed statistical significance as OS and CSS predictive factor only in T1 stage.

MP-14.08

The Prognostic Implication of Body Mass Index on Postoperative Survival Outcomes in Non-Metastatic Renal Cell Carcinoma

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Introduction and Objective: Obesity is well-known risk factor for the development of renal cell carcinoma (RCC). However, the impact of obesity on patients' survival outcomes after nephrectomy has not been clearly established thus far. We aimed to evaluate the association between body mass index (BMI) and survival outcomes in patients with non-metastatic RCC.

Materials and Methods: A single-institutional retrospective analysis was implemented on 2329 patients who underwent radical or partial nephrectomy for non-metastatic RCC from 2000 to 2014. Enrolled patients were grouped into normal (BMI <23kg/m2, n=705), overweight (BMI 23-24.9 kg/m2, n=648), and obese (BMI ≥25kg/m2, n=976) according to BMI cut-offs for Asian population. Outcomes of interest

MP-14.08, Table 1 (cont.). Patients' Characteristics and Comparative Analysis Results According to BMI Classification

Variables	Normal (BMI ≤22.9) (n=705)	Over-weight (23.0≤BMI≤24.9) (n=648)	Obesity (BMI≥25) (n=976)	p-value
ECOG performance status, n (%)				0.031
0	542(76.9%)	496(76.5%)	699(71.6%)	
1	135(19.1%)	134(20.7%)	226(23.2%)	
2	19(2.7%)	14(2.2%)	45(4.6%)	
3	4(0.6%)	4(0.6%)	4(0.4%)	
Missing/unknown	5(0.7%)		2(0.2%)	
HTN, n (%)				<0.001
No	496(70.4%)	395(61.0%)	501(51.3%)	
Yes	209(29.6%)	253(39.0%)	475(48.7%)	
DM, n (%)				0.002
No	630(89.4%)	563(86.9%)	814(83.4%)	
Yes	75(10.6%)	85(13.1%)	162(16.6%)	
ESRD, n (%)				0.013
No	678(96.2%)	630(97.2%)	961(98.5%)	
Yes	27(3.8%)	18(2.8%)	15(1.5%)	
Intraoperative parameters				
Surgical approach I, n (%)				0.643
Laparoscopic, transperitoneal	118(16.7%)	98(15.1%)	161(16.5%)	
Laparoscopic retroperitoneal	5(0.7%)	10(1.5%)	10(1.0%)	
Hand assisted laparoscopic	32(4.5%)	38(5.9%)	50(5.1%)	
Open	504(71.5%)	450(69.4%)	675(69.2%)	
Robot assisted	46(6.5%)	52(8.0%)	80(8.2%)	
Surgical approach II, n (%)				0.270
Radical	368(52.2%)	327(50.5%)	465(47.6%)	
Partial	330(46.8%)	310(47.8%)	500(51.2%)	
Partial to radical conversion	7(1.0%)	11(1.7%)	11(1.1%)	
Operation time (min), median (IQR)	140 (110-180)	150 (115-185)	150 (120-190)	<0.001
EBL (ml), median (IQR)	200 (100-300)	200 (100-400)	200 (100-400)	0.037
Pathological parameters				
Histological subtype, n (%)				<0.001
ccRCC	530(75.2%)	522(80.6%)	835(85.6%)	
non-ccRCC	175(24.8%)	126(19.4%)	141(14.4%)	
Pathologic tumor stage, n (%)				0.178
pT1	548(77.7%)	520(80.2%)	802(82.2%)	
pT2	62(8.8%)	55(8.5%)	77(7.9%)	
pT3	94(13.0%)	69(10.6%)	94(9.6%)	
pT4	1(0.1%)	4(0.6%)	3(0.3%)	
Fuhrmann nuclear grade, n (%)				0.062
Gr1-2	392(55.6%)	381(58.8%)	601(61.6%)	
Gr3	278(39.4%)	227(35.0%)	332(34.0%)	
Gr4	32(4.5%)	38(5.9%)	39(4.0%)	
Missing/unknown	3(0.4%)	2(0.3%)	4(0.4%)	
Tumor size (cm), median (IQR)	3.5 (2.2-5.5)	3.2 (2.0-5.5)	3.2 (2.0-5.1)	0.053
Pseudosarcomatous component, n (%)				0.616
Absent	696(98.7%)	636(98.1%)	963(98.7%)	
Present	9(1.3%)	12(1.9%)	13(1.3%)	

included recurrence free survival (RFS), overall survival (OS), and cancer-specific survival (CSS). Survival curves for each BMI category were estimated and compared using the Kaplan-Meier method with log-rank test. The impact of BMI as continuous or categorical variables on survival outcomes was assessed with multivariable Cox proportional hazard models.

Results: Several clinico-pathological factors, including asymptomatic presentation, being female, lower transfusion rate, higher proportion of clear cell histology, and lower frequency of nodal invasion, were observed in association with obese group (all p<0.05). Obese group showed significantly better 5-year RFS (90.7% vs 84.9%, p<0.001), OS (91.8% vs 86.8%, p=0.002), and CSS (94.8% vs 89.4%, p=0.002) rates than normal patients. On multivariable analysis, BMI as continuous variable independently correlated with favorable RFS (hazard ratio [HR] 0.93; 95% confidence interval [CI] 0.89-0.97, p=0.002), OS (HR 0.95; 95% CI 0.91-0.99, p=0.033) and CSS (HR 0.91; 95% CI 0.86-0.97, p=0.002). In addition, multivariable analysis revealed overweight (HR 0.57; 95% CI 0.37-0.87, p=0.009) and obese patients (HR 0.58; 95% CI 0.39-0.87, p=0.009) were associated with significantly reduced risk of RCC related death compared to normal patients.

Conclusion: Our data suggest overweight and obesity defined as increasing BMI are generally related to favorable survival outcomes after nephrectomy for non-metastatic RCC. Further basic research will be required to discover the biological mechanisms explaining the positive correlation between high BMI and improved RCC survival.

MP-14.09

The Prognostic Impact of Postoperative Neutrophil to Lymphocyte Ratio on Survival Outcomes in Patients Treated with Radical Nephroureterectomy for Upper Urinary Tract Urothelial Carcinoma

Kim HS[1], Jeong CW[2], Kwak C[2], Kim HH[2], Ku JH[2], **Lee JW**[1]

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Introduction and Objective: To investigate the prognostic association of postoperative neutrophil to lymphocyte ratio (NLR) with survival outcomes in upper urinary tract urothelial carcinoma (UTUC).

Materials and Methods: Data of 397 UTUC patients, who underwent radical nephroureterectomy (RNU) and had no history of neoadjuvant chemotherapy between 1999 and 2012, were retrospectively reviewed. The cut-off point of NLR was 3. Pre- and postoperative NLR as dichotomized (normal: <3 and elevated: ≥3) or continuous variables was analyzed in reference to survival outcomes. The estimation and comparison of overall survival (OS) and cancer-specific survival (CSS) rates were plotted with the Kaplan-Meier method and log-rank test. The impact of NLR on survival outcomes was assessed using univariable and multivariable Cox proportional hazard models.

Results: Patients with postoperative elevated NLR showed significantly worse 5-year OS (45.9% vs. 70.7%, log-rank p <0.001) and CSS (58.9% vs. 77.0%,

MP-14.08, Table 1 (cont.). Patients' Characteristics and Comparative Analysis Results According to BMI Classification

Variables	Normal (BMI ≤22.9) (n=705)	Over-weight (23.0≤BMI≤24.9) (n=648)	Obesity (BMI≥25) (n=976)	p-value
Tumor necrosis, n (%)				0.596
Absent	505(71.6%)	455(70.2%)	708(72.5%)	
Present	200(28.4%)	193(29.8%)	268(27.5%)	
Pathologic nodal stage, n (%)				0.033
pN0	87(12.3%)	78(12.0%)	84(8.6%)	
pN1	11(1.6%)	10(1.5%)	8(0.8%)	
pNx	607(86.1%)	560(86.4%)	884(90.6%)	
Postoperative follow up parameters				
Time to recurrence (months), median (IQR)	39 (14-59)	39 (16-61)	39 (18-60)	0.224
Recurrence result, n (%)				0.003
No recurrence	613(87.0%)	583(90.0%)	898(92.0%)	
Recurrence	92(13.0%)	65(10.0%)	78(8.0%)	
Median follow-up duration	45 (22-72)	45 (25-77)	45 (24-75)	0.491
OS result, n (%)				0.003
Alive	614(87.1%)	596(92.0%)	891(91.3%)	
All cause death	91(12.9%)	52(8.0%)	85(8.7%)	
CSS result, n (%)				0.008
Alive or other cause death	643(91.2%)	610(94.1%)	926(94.9%)	
Cancer-specific death	62(8.8%)	38(5.9%)	50(5.1%)	

log-rank p <0.001) rates. These survival differences were also similar in association with preoperative NLR. When stratifying the patients into three groups (continuous normal, vice versa, and continuous elevated) by pre-and postoperative NLR changes, the OS and CSS rates were discriminated well among groups (all log-rank p <0.001). When performing survival analysis in subgroups, the significant survival differences according to postoperative NLR was found only in patients with high grade tumor and negative surgical margin (all log-rank p<0.05). On multivariable analysis adjusting other well-known prognostic factors, such as stage, grade, lymphovascaulr invasion, and surgical margin, increased postoperative NLR was significantly associated with worse OS (hazard ratio [HR] 1.15; 95% confidence interval 1.04-1.27, p=0.007) and CSS (HR 1.13; 95% CI 1.01-1.27, p=0.045).

Conclusion: The NLR in postoperative setting as well as in preoperative status may be used as an inexpensive prognostic biomarker predicting survival outcomes in UTUC patients treated with RNU.

MP-14.10

Surgical Treatment of Renal Cell Carcinoma in Elderly Patients: Functional Outcomes and Perioperative Complications

Quintana LM, Linares E, Aguilera A, Alonso-Dorrego JM, Alvarez M, Lindo L, Hevia M, Eguibar A, Martinez-Piñeiro L

MP-14.08, Table 2. Multivariable Cox Proportional Hazard Models for RFS, OS, and CSS in the Entire Study Cohort (n=2329)

	RFS		OS		CSS	
Variables	**HR (95% CI)**	**p-value**	**HR (95% CI)**	**p-value**	**HR (95% CI)**	**p-value**
Clinical parameters						
Symptomatic presentation (no vs. yes)	1.38 (1.03-1.86)	0.031	1.73 (1.28-2.34)	<0.001	1.87 (1.29-2.70)	0.001
Age (continuous)	1.00 (0.99-1.02)	0.505	1.05 (1.04-1.06)	<0.001	1.03 (1.01-1.04)	0.001
BMI (continuous)	0.93 (0.89-0.97)	0.002	0.95 (0.91-0.99)	0.033	0.91 (0.86-0.97)	0.002
ECOG performance status (ref. 0)						
1	1.39 (1.04-1.86)	0.026	1.38 (1.03-1.86)	0.032	1.30 (0.90-1.89)	0.166
2	1.93 (1.09-3.41)	0.023	1.97 (1.20-3.26)	0.008	1.35 (0.64-2.88)	0.431
3	2.87 (0.90-9.15)	0.074	4.10 (1.47-11.40)	0.007	3.61 (0.85-15.35)	0.082
HTN (no vs. yes)	1.33 (1.01-1.76)	0.045	1.14 (0.84-1.56)	0.393	1.52 (1.04-2.23)	0.030
DM (no vs. yes)	1.46 (1.03-2.07)	0.032	1.81 (1.31-2.48)	<0.001	2.11 (1.42-3.14)	<0.001
Preoperative Hb (continuous)	0.97 (0.90-1.03)	0.313	0.91 (0.85-0.97)	0.004	0.96 (0.88-1.04)	0.300
Receipt of PBT (no vs. yes)	1.19 (0.84-1.69)	0.321	1.23 (0.86-1.75)	0.255	1.14 (0.74-1.74)	0.550
Pathological parameters						
Maximal tumor diameter (continuous)	1.13 (1.08-1.18)	<0.001	1.18 (1.12-1.24)	<0.001	1.20 (1.14-1.27)	<0.001
Pathological tumor stage (ref. pT1)						
pT2	1.71 (1.10-2.67)	0.017	0.78 (0.48-1.28)	0.331	1.07 (0.60-1.92)	0.820
pT3	3.60 (2.45-5.30)	<0.001	1.58 (1.05-2.38)	0.027	2.57 (1.56-4.22)	<0.001
pT4	2.70 (0.99-7.40)	0.053	2.83 (1.10-7.31)	0.031	2.27 (0.79-6.52)	0.128
Fuhrmann nuclear grade (ref. 1-2)						
3	2.01 (1.45-2.78)	<0.001	1.12 (0.82-1.54)	0.482	1.70 (1.11-2.59)	0.014
4	2.79 (1.79-4.36)	<0.001	1.07 (0.64-1.81)	0.791	1.94 (1.06-3.54)	0.031
Pseudosarcomatous component (no vs. yes)	0.87 (0.46-1.65)	0.663	1.76 (0.93-3.34)	0.085	1.76 (0.92-3.39)	0.089

MP-14.08, Table 2 (cont.). Multivariable Cox Proportional Hazard Models for RFS, OS, and CSS in the Entire Study Cohort (n=2329)

	RFS		OS		CSS	
Variables	**HR (95% CI)**	**p-value**	**HR (95% CI)**	**p-value**	**HR (95% CI)**	**p-value**
Tumor necrosis (no vs. yes)	1.51 (1.13-2.01)	0.005	1.14 (0.84-1.54)	0.400	1.34 (0.92-1.95)	0.128
pN1	3.37 (1.91-5.95)	<0.001	4.51 (2.50-8.14)	<0.001	4.45 (2.34-8.47)	<0.001

MP-14.08, Table 3. Multivariable Cox Proportional Hazard Models for RFS, OS, and CSS in the Entire Study Cohort (n=2329)

	RFS		OS		CSS	
Variables	**HR (95% CI)**	**p-value**	**HR (95% CI)**	**p-value**	**HR (95% CI)**	**p-value**
Clinical parameters						
Symptomatic presentation (no vs. yes)	1.39 (1.04-1.87)	0.028	1.77 (1.31-2.40)	<0.001	1.90 (1.32-2.76)	0.001
Age (continuous)	1.00 (0.99-1.02)	0.548	1.05 (1.03-1.06)	<0.001	1.03 (1.01-1.04)	0.001
BMI (ref. normal)						
Over-weight	0.75 (0.55-1.04)	0.089	0.63 (0.44-0.90)	0.011	0.57 (0.37-0.87)	0.009
Obesity	0.56 (0.41-0.77)	<0.001	0.75 (0.55-1.03)	0.074	0.58 (0.39-0.87)	0.009
ECOG performance status (ref. 0)						
1	1.41 (1.05-1.88)	0.022	1.28 (0.95-1.74)	0.107	1.29 (0.88-1.87)	0.187
2	1.95 (1.10-3.44)	0.022	1.95 (1.18-3.22)	0.009	1.34 (0.63-2.86)	0.441
3	2.98 (0.93-9.48)	0.065	4.14 (1.49-11.51)	0.006	3.58 (0.84-15.24)	0.084
HTN (no vs. yes)	1.35 (1.02-1.79)	0.034	1.12 (0.82-1.53)	0.480	1.46 (0.99-2.14)	0.055
DM (no vs. yes)	1.48 (1.04-2.09)	0.027	1.76 (1.28-2.42)	<0.001	1.94 (1.29-2.90)	0.001
Preoperative Hb (continuous)	0.97 (0.90-1.03)	0.334	0.91 (0.85-0.97)	0.004	0.95 (0.87-1.03)	0.211
Receipt of PBT (no vs. yes)	1.21 (0.85-1.71)	0.282	1.24 (0.87-1.76)	0.240	1.15 (0.75-1.76)	0.513
Pathological parameters						
Maximal tumor diameter (continuous)	1.13 (1.08-1.18)	<0.001	1.17 (1.11-1.23)	<0.001	1.20 (1.13-1.26)	<0.001
Pathological tumor stage (ref. pT1)						
pT2	1.71 (1.10-2.68)	0.018	0.76 (0.47-1.24)	0.272	0.98 (0.54-1.76)	0.943
pT3	3.59 (2.44-5.28)	<0.001	1.56 (1.04-2.35)	0.031	2.47 (1.50-4.06)	<0.001
pT4	3.09 (1.12-8.49)	0.029	2.43 (0.90-6.57)	0.080	2.40 (0.83-6.89)	0.105
Fuhrmann nuclear grade (ref. 1-2)						
3	2.01 (1.45-2.78)	<0.001	1.14 (0.83-1.57)	0.406	1.64 (1.07-2.52)	0.022
4	2.80 (1.79-4.38)	<0.001	1.08 (0.64-1.83)	0.781	1.83 (0.99-3.36)	0.051
Pseudosarcomatous component (no vs. yes)	0.86 (0.45-1.64)	0.650	1.72 (0.96-3.09)	0.067	1.88 (0.97-3.61)	0.060
Tumor necrosis (no vs. yes)	1.52 (1.14-2.02)	0.004	1.14 (0.84-1.54)	0.389	1.37 (0.94-1.98)	0.097
pN1	3.41 (1.92-6.05)	<0.001	4.40 (2.42-8.00)	<0.001	4.46 (2.34-8.54)	<0.001

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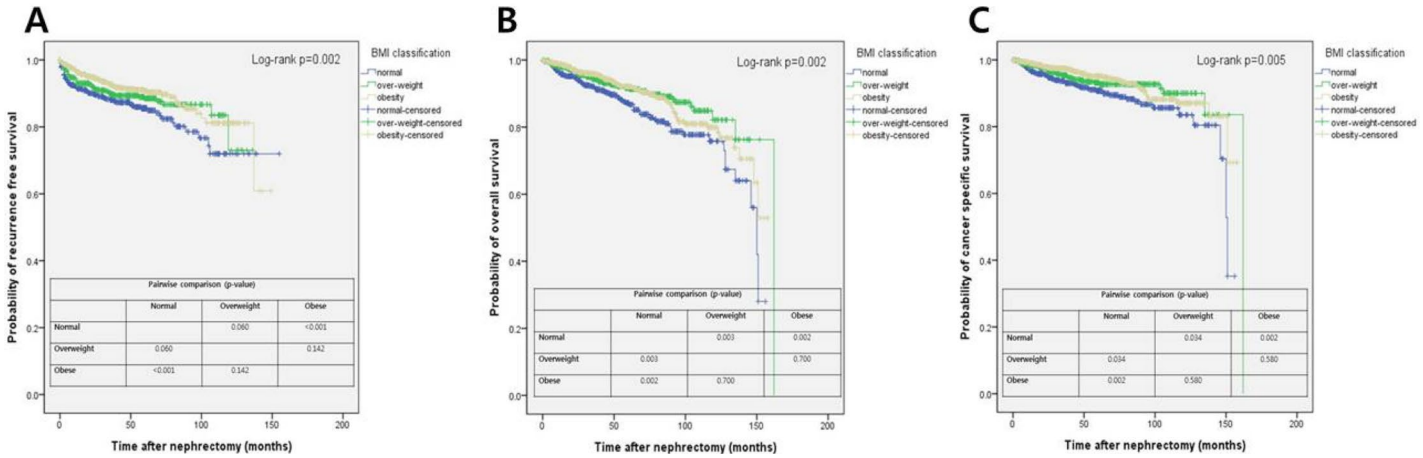
Introduction and Objective: We aimed to evaluate renal function outcomes and perioperative complications in elderly patients with renal cell carcinoma who underwent radical (RN) or partial nephrectomy (PN) at our institution.

Materials and Methods: Between 2001 and 2015, 707 nephrectomies (RN and PN) were performed at our institution. We identified 98 (14%) elderly patients, defined as >75 years of age at time of surgery. We analyzed baseline patient characteristics, charlson comorbidity index (CCI), preoperative renal function, RENAL nephrometry score, type of surgery (RN vs PN) and surgical approach. We compared surgical outcomes between RN and PN. Study outcomes were renal function at follow-up measured by changes in eGFR before and after surgery at 1-6 months and >12 months.

Results: At a median follow-up of 62 months (IQR 26-109), 60 patients were alive. Median age at surgery was 77 (IQR 76-81) with median CCI 2 (range 1-7). Tumor characteristics showed smaller tumors undergoing PN (50 mm vs 27 mm, p=0.02) with no differences on RENAL score (7 vs 5, p=0.12) for RN and PN, respectively. Out of 98 patients, 84 (86%) underwent RN while 14 (14%) had PN. Surgical approach was 54 laparoscopic (49 RN, 5 PN) and 44 open (35 RN, 9 PN). Shorter operative time was observed in RN group, 130 min vs 165 min (p=0.03). Mean hospital stay was 5 (IQR 3-6) and 3 (IQR 3-4) days for RN and PN (p=0.16), with 7% and 14% transfusion rate (p=0.14), respectively. Overall 29 (30%) perioperative complications were recorded (30% RN and 29% PN) (p=0.91). High-grade complications (Clavien >3) were described in 6 RN and none PN. Preoperative mean eGFR was 63 ml/min/1.73m2 and mean serum Cr 1.06 mg/dl (SD ±0,26). Renal functional outcomes were postoperative eGFR of 60 at 1-6m FU and 52 eGFR at >12m. When comparing RN and PN, eGFR at last follow-up was 46 and 53, respectively (p=0.41).

Conclusions: RN had shorter operative time, with similar perioperative complication rates between groups. No differences in renal function outcomes were observed between RN and PN in elderly patients. This information could be helpful for surgeons in decision making process and for patients counseling.

MP-14.08, Figure 1. Kaplan-Meier Curves for Postoperative Survival Outcomes According to BMI Classification; (A) RFS (B) OS (C) CSS



MP-14.09, Table 1. Patients' Characteristics of the Study Cohort and Comparative Analysis Results According to Dichotomized Postoperative NLR

Variables	Total (n=397)	Postoperative NLR		p-value
		NLR < 3 (n=334, 84.1%)	NLR ≥ 3 (n=63, 15.9%)	
Clinical parameters				
Age, year, median (IQR)	65.1(58.2-71.6)	65.1(58.2-71.6)	65.6(58.1-70.7)	0.793
Gender, n (%)				0.102
Male	302(76.1%)	249(74.6%)	53(84.1%)	
Female	95(23.9%)	85(25.4%)	10(15.9%)	
BMI(kg/m2), median (IQR)	24.3(22.9-25.9)	24.3(22.3-26.0)	24.4(22.1-25.4)	0.442
Previous or concomitant bladder cancer, n (%)				0.441
Absent	320(80.6%)	267(79.9%)	53(84.1%)	
Present	77(19.4%)	67(20.1%)	10(15.9%)	
Previous urine cytology result, n (%)				0.939
Negative	194(48.9%)	164(49.1%)	39(47.6%)	
Positive	165(41.6%)\	139(41.6%)	26(41.3%)	
Missing/unknown	38(9.6%)	31(9.3%)	7(11.1%)	
Preoperative hydronephrosis, n (%)				0.930
Absent	223(55.9%)	188(56.3%)	35(55.6%)	
Present	174(43.8%)	146(43.7%)	28(44.4%)	
Surgical approach				0.896
ORNU	280(70.5%)	236(70.7%)	44(69.8%)	
LRNU	117(29.5%)	98(29.3%)	19(30.2%)	
Bladder cuff excision				0.452
Not done	63(15.9%)	51(15.3%)	12(19.0%)	
Done	334(84.1%)	283(84.7%)	51(81.0%)	
Pathological parameters				
Tumor stage, n (%)				0.321
≤pT2	237(59.7%)	203(60.8%)	34(54.0%)	
pT3/T4	160(40.3%)	131(39.2%)	29(46.0%)	
Tumor grade, n (%)				0.353
Low grade	127(32.0%)	110(32.9%)	17(27.0%)	
High grade	270(68.0%)	224(67.1%)	46(73.0%)	

MP-14.11

Robotic Partial Nephrectomy for Complex Renal Lesions: Strategies for Success. A Multi-Institutional Study

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Introduction and Objective: Some complex renal tumours due to their size, location and proximity to the hilum may preclude a minimally invasive approach to nephron sparing surgery. We describe our technique, illustrated with images and videos, of robotic partial nephrectomy for challenging renal tumours.

Materials and Methods: A study of 249 patients who underwent robotic partial nephrectomy (RPN) in multiple institutions was performed. Patients were identified using a prospective RPN databases. A complex renal lesion was defined as a RENAL nephrometry score ≥10. Data was presented as median (interquartile range) and difference between groups was examined.

Results: Thirty-one (12.4%) of RPN were for complex renal. Median age was 57 (50.5 – 70.5) years. Twenty-one (67.7%) were male, 10 (32.3%) were female. American Society of Anesthesiologists score was 2 (2 - 3). Median operative time was 200 (50 – 265) min, median warm ischaemia time was 23 (18.5 – 29) min, and median blood loss was 200 (50 – 265) ml. There were no intraoperative complications, 2 (6.4%) of patients had a post-operative complications. 1 (3.2%) patient had a positive margin. Length of stay was 3.5 (3 – 5) days. Median follow up was 12.5 (7 – 24) months, there were no recurrences. RPN did result in statistical significant changes in renal function 3 months post RPN compared to preoperative renal function, p=0.0001.

Conclusion: RPN is a safe approach for select patients with complex renal tumours and may facilitate tumour resection and renorrhaphy for challenging cases, offering a minimally invasive surgical option for patients who may otherwise require open surgery.

MP-14.09, Table 1. Patients' Characteristics of the Study Cohort and Comparative Analysis Results According to Dichotomized Postoperative NLR

Variables	Total (n=397)	Postoperative NLR		p-value
		NLR < 3 (n=334, 84.1%)	NLR ≥ 3 (n=63, 15.9%)	
Concomitant CIS, n (%)				0.640
Absent	339(85.4%)	284(85.0%)	55(87.3%)	
Present	58(14.6%)	50(15.0%)	8(12.7%)	
LVI, n (%)				0.147
Absent	311(78.3%)	266(79.6%)	45(71.4%)	
Present	86(21.7%)	68(20.4%)	18(28.6%)	
Variant histology of UC, n (%)				0.003
Absent	361(90.9%)	310(92.8%)	51(81.0%)	
Present	36(9.1%)	24(7.2%)	12(19.0%)	
Tumor multifocality, n (%)				0.464
Unifocal	328(82.6%)	279(83.5%)	49(77.8%)	
Multifocal	69(17.4%)	54(16.2%)	14(22.2%)	
Tumor location, n (%)				0.064
Renal pelvis	192(48.4%)	164(49.1%)	28(44.4%)	
Ureter	148(37.3%)	128(38.3%)	20(31.7%)	
Both	57(14.4%)	42(12.6%)	15(23.8%)	
Surgical margin, n (%)				<0.001
Negative	376(94.7%)	323(96.7%)	53(84.1%)	
Positive	21(5.3%)	11(3.3%)	10(15.9%)	
LN status, n (%)				0.042
pNx	319(80.4%)	275(82.3%)	44(69.8%)	
pN0	63(15.9%)	49(14.7%)	14(22.2%)	
pN ≥1	15(3.8%)	10(3.0%)	5(7.9%)	
Postoperative follow up parameters				
ACH, n (%)				0.156
Not done	304(76.5%)	260(77.8%)	44(69.8%)	
Done	93(23.5%)	73(22.2%)	19(30.2%)	
Follow-up duration (mos), median (IQR)	54.9(27.9-105.5)	55.7(32.0-102.8)	53.4(23.7-107.0)	0.316
OS result, n (%)				<0.001
Alive	272(68.5%)	241(72.2%)	31(49.2%)	
All cause death	125(31.5%)	93(27.8%)	32(50.8%)	
CSS result, n (%)				<0.001
Alive or other cause death	299(75.3%)	263(78.7%)	36(57.1%)	
Cancer-specific death	98(24.7%)	71(21.3%)	27(42.9%)	

MP-14.09, Table 2. Perioperative Change of Neutrophil, Lymphocyte, and NLR Values

Variables	Preoperative	Postoperative	*P* value
Neutrophil counts (103/ul), median (IQR)	4.00 (3.09 – 5.44)	3.64 (2.96 – 4.53)	<0.001
Lymphocyte counts(103/ul), median (IQR)	1.83 (1.45 – 2.26)	1.89 (1.53 – 2.42)	<0.001
NLR, median (IQR)	2.20 (1.54 – 3.18)	1.90 (1.41 – 2.52)	<0.001
NLR < 3, n (%)	272 (68.5%)	334 (84.1%)	<0.001
NLR ≥ 3, n (%)	125 (31.5%)	63 (15.9%)	

MP-14.12

Outcomes of Pathologic T3a Renal Cell Carcinoma Up-Staged from Small Renal Tumour: Emphasis on Partial Nephrectomy

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Introduction and Objective: Controversy continues on the prognosis of pathologic T3a renal cell carcinoma (RCC) that is up-staged from a small renal tumour. We evaluated the prognosis of RCC patients who were postoperatively up-staged from clinical T1 to pathologic T3a.

Materials and Methods: We retrospectively reviewed the data of 3,431 patients surgically treated for clinical T1 RCC. The survival outcomes were compared using Kaplan-Meier and Cox proportional analyses.

Results: Among the clinical T1 RCC patients, 215 (6.3%) were finally up-staged to pathologic T3a. Patient age (HR 1.302, 95% CI 1.018–1.046, p < 0.001), tumour diameter (HR 1.686, 95% CI 1.551–1.834, p < 0.001), and hilar location (HR 1.765, 95% CI 1.147–2.715, p = 0.010) were significantly associated with up-staging in multivariate analyses. Kaplan-Meier analyses showed significantly poorer progression-free (PFS), cancer specific (CSS) and overall (OS) survivals (all p < 0.001) in up-staged patients. Multivariate Cox analyses revealed pathologic up-staging as an independent predictor of inferior PFS (HR 2.195, 95% CI 1.459–3.300, p < 0.001), CSS (HR 2.238, 95% CI 1.252–4.003, p = 0.007), and OS (HR 1.632, 95% CI 1.029–2.588, p = 0.037). Subgroup analysis of pathologic T3a showed that there was no significant difference in survival in the partial nephrectomy group compared with the radical nephrectomy group (all p > 0.5).

Conclusion: RCC patients up-staged from clinical T1 to pathologic T3a showed worse postoperative outcomes than those without up-staging. However, partial nephrectomy, compared with radical nephrectomy, resulted in comparable outcomes in patients who were up-staged.

MP-14.13

Local Ischemia as an Alternative to Thermal in Kidney Resection

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Introduction and Objective: Kidney resection in renal cell carcinoma provides a good overall survival, but the use of central ischemia that promotes radical removal of the tumor and adequate hemostasis often leads to irreversible changes in the kidneys from further deterioration or even loss of function to development of chronic renal failure. The objective is to evaluate the effectiveness of local ischemia during resection and its impact on kidney function.

Materials and Methods: Retrospective analysis of 229 patients with renal cell carcinoma who underwent kidney resection. Age ranged from 25 to 83 years (56.3 ± 11.1). Men\women ratio: 163 (56%)\ 128

MP-14.09, Table 3. Univariable and Multivariable Cox Proportional Hazard Models for Overall Survival in the Study Cohort

	Univariable analysis		Multivariable analysis	
Variables	**Unadjusted HR (95% CI)**	**p-value**	**Adjusted HR (95%) CI**	**p-value**
Clinical parameters				
Age (continuous)	1.03 (1.01-1.05)	<0.001	1.03 (1.01-1.06)	<0.001
Gender (female vs. male)	0.97 (0.64-1.48)	0.897		
BMI (continuous)	0.96 (0.91-1.02)	0.159		
Previous or concomitant bladder cancer (present vs. absent)	1.83 (1.22-2.74)	0.003	1.36 (0.82-2.25)	0.226
Preoperative urine cytology (positive vs. negative)	1.86 (1.28-2.70)	0.001	1.27 (0.85-1.90)	0.250
Preoperative hydronephrosis (present vs. absent)	1.44 (1.01-2.05)	0.042	1.70 (1.07-2.69)	0.024
Surgical approach (LRNU vs. ORNU)	1.26 (0.86-1.84)	0.236		
Bladder cuff excision (done vs. not done)	0.38 (0.26-0.56)	<0.001	0.48 (0.31-0.74)	0.001
ACH (done vs. not done)	1.95 (1.35-2.83)	<0.001	0.97 (0.58-1.61)	0.910
Preoperative NLR (continuous)	1.05 (0.98-1.13)	0.180		
Postoperative NLR (continuous)	1.14 (1.05-1.23)	0.002	1.15 (1.04-1.27)	0.007
Pathological parameters				
Tumor stage (pT3/4 vs. ≤pT2)	3.28 (2.28-4.72)	<0.001	1.88 (1.23-2.86)	0.003
Tumor grade (high vs. low)	3.49 (2.14-5.70)	<0.001	2.34 (1.32-4.15)	0.003
Concomitant CIS (present vs. absent)	1.23 (0.75-2.00)	0.407		
LVI (present vs. absent)	3.02 (2.10-4.35)	<0.001	1.57 (1.02-2.42)	0.042
Variant histology of UC (present vs. absent)	3.09 (1.96-4.86)	<0.001	1.50 (0.87-2.58)	0.145
Tumor multifocality (multifocal vs. unifocal)	1.78 (1.19-2.67)	0.005	1.34 (0.76-2.39)	0.313
Tumor location (both vs. renal pelvis or ureter only)	2.22 (1.43-3.44)	<0.001	1.29 (0.77-2.16)	0.337
Surgical margin (positive vs. negative)	5.17 (2.99-8.93)	<0.001	4.12 (2.16-7.83)	<0.001
Nodal stage (≥pN1 vs. pN0/Nx)	2.70 (1.27-5.73)	0.010	0.85 (0.35-2.05)	0.714

(44%). Tumor size ranged from 10 to 208mm (55.3 ± 26.4). The impact of the ischemia type on the amount of bleeding and kidney functional status was assessed by comparing two groups of patients: the first group included 107 (46.7%) patients in whom surgery was performed with the central ischemia lasting from 5 to 21hv (9.9 ± 3.3), the second group - 122 (53.3%) patients where local ischemia was used (Fig 1.). Before resection two sutures are passed under the tumor base (1a). Than the ends of the sutures are tied, creating the zone of local ischemia (1b and 1c). After the resection is done and the defect is closed the sutures are removed.

Results: Surgery was performed both open and laparoscopically. There was found no statistically significant difference in tumor size (46.7 ± 22.9 and 46.9 ± 25.6mm) and intraoperative blood loss (340.4 ± 129.2 and 353.4 ± 235.2ml) between the two groups (p> 0.2), confirming the adequacy and implementation of the method. There were found no differences in the number of intra- and postoperative complications such as bleeding, hyperthermia or urinary fistula according to Clavien-Dindo (9 (8.4%) and 10 (8.2%) cases, respectively) (P> 0.9). After comparing GFR on the affected side, it was found that despite no significant difference in the preoperative period indicators (44.4 ± 11.5 and 45.2 ± 13.1ml / min / 1.73m2 respectively), central ischemia significantly reduced its function in the postoperative period: during 3 months - by 25.9% to a value 33,8 ± 10.7, 1 year - by 28.5% to a value 32.6 ± 11.9 (p < 0.05). Although local ischemia group also had a 11.5% decline to 39.1 ± 10.9 (p <0.05) during 3 months, but after 1 year, kidney function did not differ significantly (p> 0.05) and was close to initial - 42.3 ± 9.8ml / min / 1.73m2.

Conclusion: Local ischemia during kidney resection despite the type of surgical approach makes it possible to improve hemostasis, duration and volume of ischemic kidney, which reduces the risk of deterioration of renal function in the future.

MP-14.14

Venous Tumor Thrombus in Patients with Renal Cell Carcinoma – Clinical and Oncological Outcome after Surgery

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Introduction and Objectives: Renal cell carcinoma (RCC) is associated with intravascular tumor thrombus in 4%-10% of cases, of which nearly one-third of patients also have concurrent metastatic disease. We evaluated the clinical outcome and factors affecting survival in patients with RCC and venous tumor thrombus (VTT).

Materials and Methods: Between 2008 and 2016, 38 patients with VTT underwent radical nephrectomy and thrombectomy in our institution. Patient data was reviewed retrospectively to evaluate the demographics, pathological features, clinical outcomes, and survival. Univariate analysis was used to determine the prognostic factors of overall survival (OS).

Results: Thirty eight patients with a mean age of 63,2 years were operated. Thrombus level according to the classification of Montie et al., was in the renal vein in 14 patients (36.8%), at the entry of vena cava in 6 patients, infrahepatic in 8 patients, suprahepatic in 8 patients and intracardiac in 2 patients. The mean tumor size was 104,6 mm. Pathological examination revealed RCC of clear cell type in 34 patients, papillary in 2, chromophobe in 1 and collecting ducts in 1 patient. Fourteen patients had distant metastases. After a median follow up of 44.7 months, 21 patients died. Distant metastases (p=0.009), pathological T stage (p=0.003), surgical margins (p=0.026) and Fuhrman grade (p=0,004) were found to significantly affect OS. The level of the tumor thrombus, lymph node involvement, thrombocytosis, hyperkalemia, and sarcomatoid component were not shown to affect OS.

Conclusions: Radical nephrectomy and thrombectomy is currently known to be the most effective therapeutic option in patients with RCC and VTT. Despite the low number of patients treated, the data are consistent with those reported in the literature.

MP-14.15

Neoadjuvant Targeted Therapy in Treatment of Localized RCC

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Introduction and Objective: The use of targeted therapy (TT) significantly increased survival of the patients with metastatic renal cell cancer (RCC), decreasing the size of the primary foci as well. Therefore, the use of TT, in neoadjuvant setting, maybe thr right way of research. The objective of the study: to assess the efficacy of the neoadjuvant TT in kidney tumor size reduction with further nephron-sparing approach in treatment of localized RCC.

Materials and Methods: In 2008-2016, 1727 RCC patients aged from 24 to 81 (54.5 ± 8.8) were operated in the Department of Plastic and Reconstructive Oncourology of the National Cancer Institute. Fifty one patients received 2 months of neoadjuvant TT with Pazopanib (n = 37) or Sunitinib (n = 14). In all cases, the complex clinical examination was provided including CT, the assessment of the size of cancer, its localization and the volume of the functional parenchyma according to the NCIU classification. 6 (11%) patients had bilateral RCC, in 4 (7.8%) patients cancer affected the solitary kidney, one patient (2.0%) has cancer of the horseshoe kidney, and the rest of 40 patients (78.4%) have unilateral RCC. In general, 57 RCC cases were clinically assessed. The size of the RCC ranged from 15 mm to 170 mm (68.9 ± 26.5 mm). The rate and extent of the RCC regression caused by neoadjuvant TT and the improvement in the setting of the organ-sparing surgery have been analyzed in the study.

MP-14.09, Table 4. Univariable and Multivariable Cox Proportional Hazard Models for Cancer Specific Survival in the Study Cohort

Variables	Univariable analysis		Multivariable analysis	
	Unadjusted HR (95% CI)	p-value	Adjusted HR (95%) CI	p-value
Clinical parameters				
Age (continuous)	1.02 (0.99-1.04)	0.098		
Gender (female vs. male)	0.97 (0.60-1.56)	0.908		
BMI (continuous)	0.95 (0.89-1.01)	0.081		
Previous or concomitant bladder cancer (present vs. absent)	1.90 (1.21-2.98)	0.005	1.40 (0.79-2.47)	0.251
Preoperative urine cytology (positive vs. negative)	2.03 (1.33-3.12)	0.001	1.34 (0.85-2.12)	0.213
Preoperative hydronephrosis (present vs. absent)	1.70 (1.14-2.54)	0.009	1.41 (0.78-2.55)	0.258
Surgical approach (LRNU vs. ORNU)	1.40 (0.92-2.12)	0.120		
Bladder cuff excision (done vs. not done)	0.31 (0.20-0.47)	<0.001	0.42 (0.26-0.66)	<0.001
ACH (done vs. not done)	2.51 (1.67-3.76)	<0.001	1.08 (0.64-1.82)	0.781
Preoperative NLR (continuous)	1.03 (0.95-1.12)	0.485		
Postoperative NLR (continuous)	1.14 (1.04-1.24)	0.005	1.13 (1.01-1.27)	0.045
Pathological parameters				
Tumor stage (pT3/4 vs. ≤pT2)	3.58 (2.36-5.44)	<0.001	1.77 (1.08-2.89)	0.023
Tumor grade (high vs. low)	5.46 (2.83-10.51)	<0.001	3.13 (1.43-6.85)	0.004
Concomitant CIS (present vs. absent)	1.22 (0.70-2.11)	0.482		
LVI (present vs. absent)	3.88 (2.60-5.79)	<0.001	2.12 (1.33-3.36)	0.001
Variant histology of UC (present vs. absent)	3.71 (2.29-6.03)	<0.001	1.79 (1.04-3.07)	0.036
Tumor multifocality (multifocal vs. unifocal)	1.92 (1.23-3.01)	0.004	1.90 (1.17-3.08)	0.009
Tumor location (both vs. renal pelvis or ureter only)	2.66 (1.60-4.41)	<0.001	1.22 (0.58-2.59)	0.596
Surgical margin (positive vs. negative)	5.28 (2.86-9.73)	<0.001	3.24 (1.60-6.56)	0.001
Nodal stage (≥pN1 vs. pN0/Nx)	3.35 (1.46-7.66)	0.004	0.78 (0.28-2.14)	0.631

Results: The two-month TT course resulted in regression of tumor in 51 (89.5%) cases. In 4 (7.0%) - the tumor size was stabilized. In 2 (3.5%) patients, the tumor progressed by 10 % and 15 %, respectively. We did not find the influence of tumor size on its regression. The overall average regression rate was (20.6 ± 15.1%). In the patients stratified according to the size of the tumor, the following average regression rates were achieved: 25.6% ± 20.5% – in the group with tumors of less than 4 cm (n = 10); 17.3% ± 12.1% – in the group with the tumor size ranged from 4 to 7 cm (n = 22); 21.5% ± 15% – in the group with the tumors exceeding 7 cm (n = 25) (t-test; p = 0.29). The decrease in the size of primary RCC due to the neoadjuvant TT was a prerequisite for the organ-sparing treatment (partial nephrectomy) in 41 (71.9 %) patients including those with bilateral RCC and RCC of solitary kidney. Nevertheless, the cases of progression and stabilization of the tumor growth in the setting of central localization of cancer and small percentage of functional parenchyma in 16 (28.1 %) patients required nephrectomy.

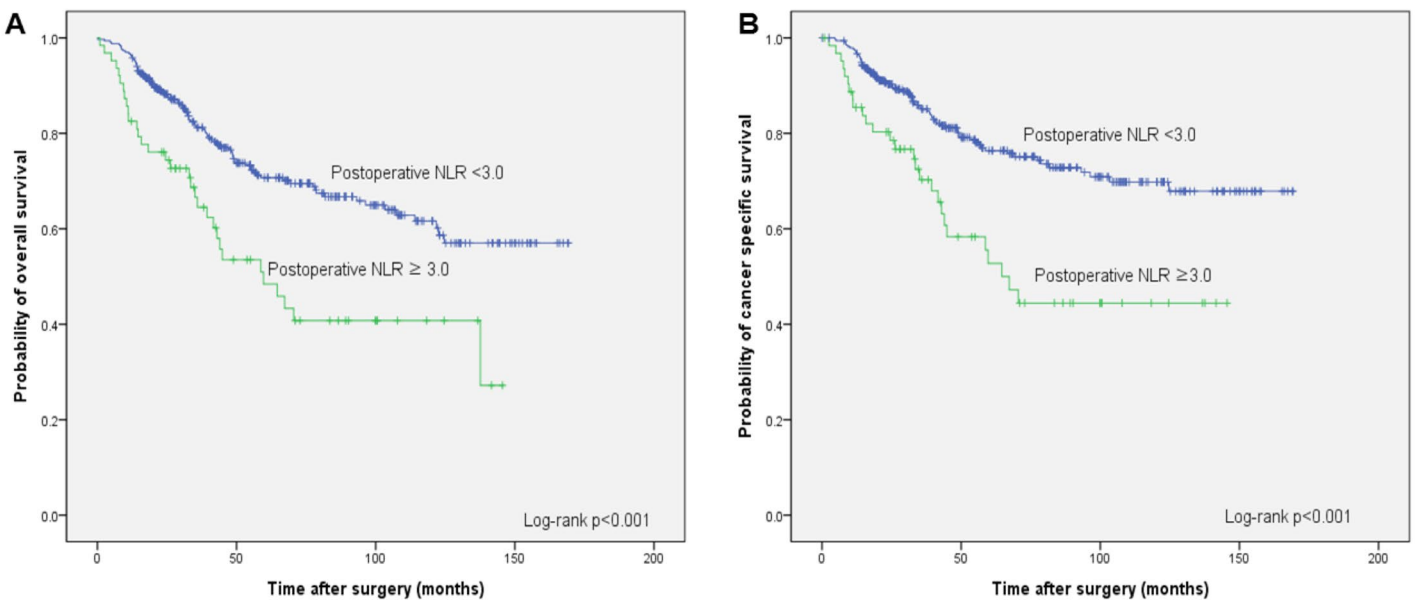
Conclusion: The neoadjuvant TT in our series of localized RCC provided the average tumor regression of 20.6% ± 15.1% facilitating organ-sparing treatment in 71.9% patients. Results of neoadjuvant TT in the RCC are encouraging and need more studies to evaluate the place of such treatment strategy in management of localized RCC, especially in the setting of downsizing tumor for safer subsequent organ-sparing surgery.

MP-14.16

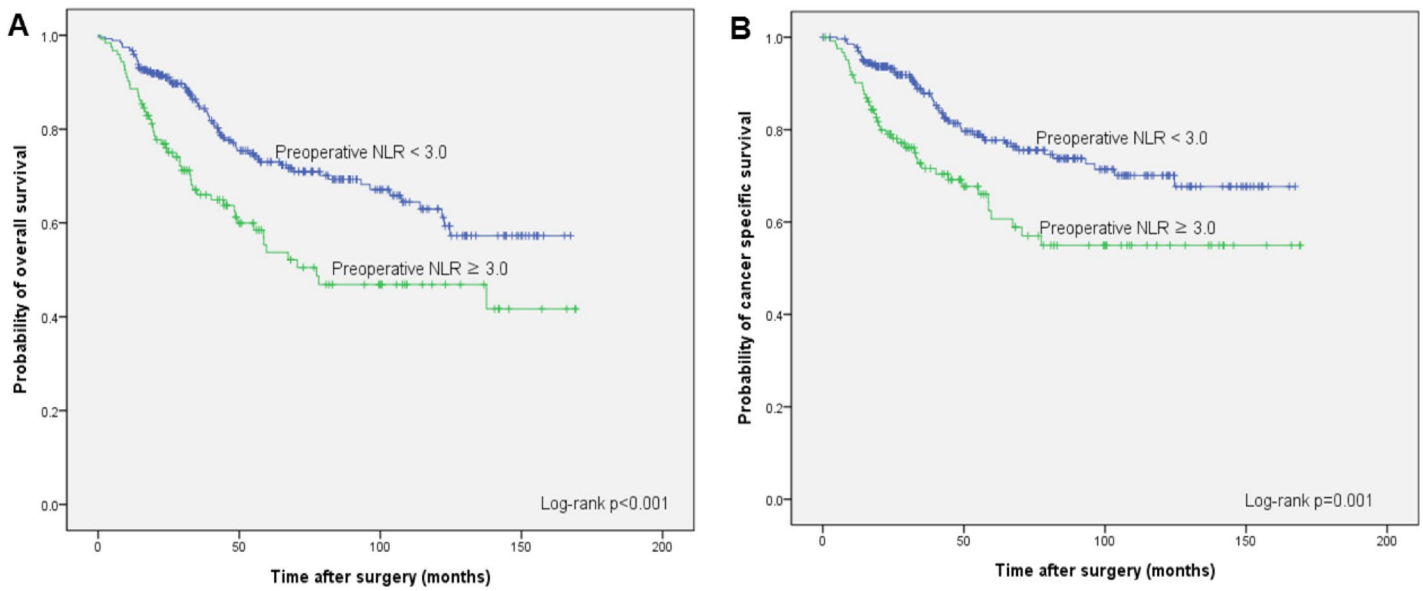
Bellini Duct Renal Cell Carcinoma – Aggressive Tumor that Requires a More Thorough Monitoring

Vitruk L[1], Kononenko O[1], Voylenko O[1], Stakhovskyi O[1], Pikul M[1], Krotevich M[2], Stakhovsky E[3]

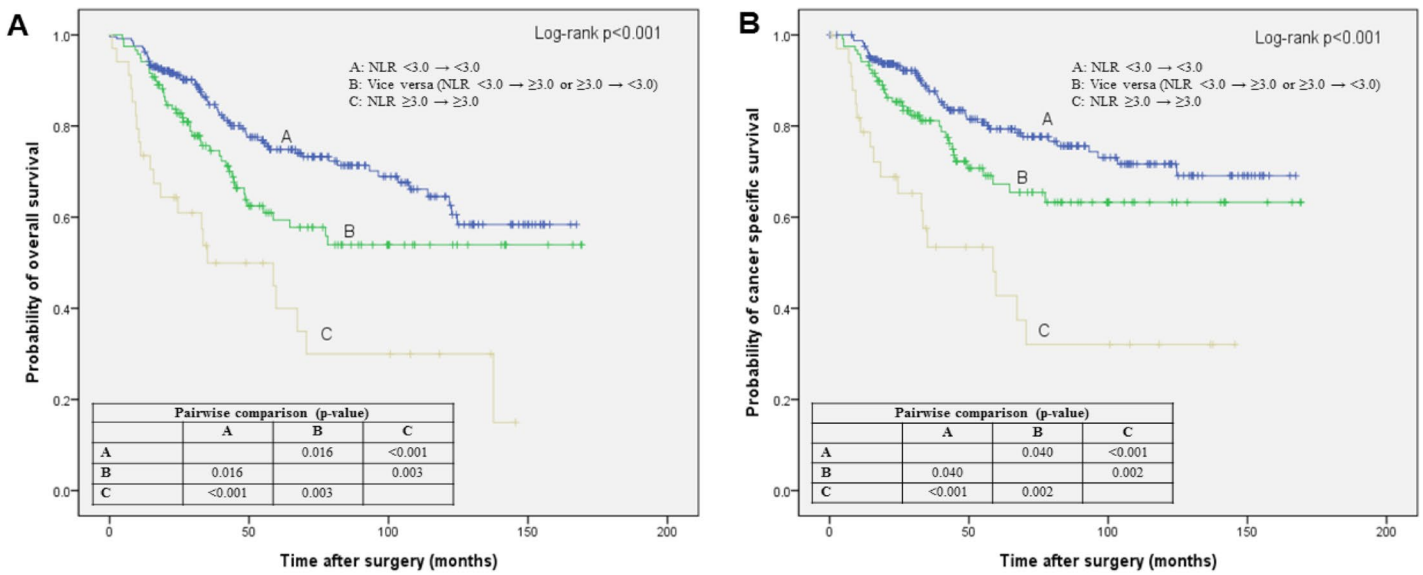
MP-14.09, Figure 1. Comparison of Overall Survival (A) and Cancer Specific Survival (B) Rates According to Postoperative NLR in the Study Cohort



MP-14.09, Figure 2. Comparison of Overall Survival (A) and Cancer Specific Survival (B) Rates According to Preoperative NLR in the Study Cohort



MP-14.09, Figure 3. Comparison of Overall Survival (A) and Cancer Specific Survival (B) Rates According to Preoperative NLR in the Study Cohort



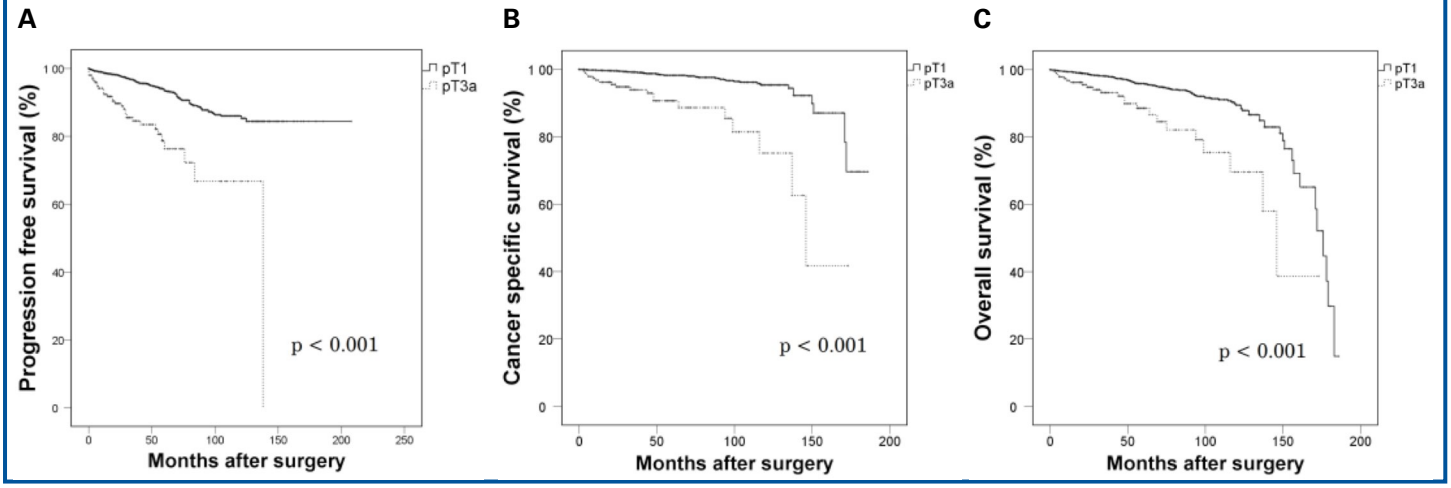
[1]*Dept. of Plastic and Reconstructive Onco-Urology, National Cancer Institute, Kyiv, Ukraine;* [2]*Dept. of Pathological Anatomy and Histology, National Cancer Institute, Kyiv, Ukraine;* [3]*Dept. of Plastic and Reconstructive Onco-Urology, National Cancer Institute, Kyiv, Ukraine*

Introduction and Objective: Bellini duct carcinoma occurs less than in 1% of all malignant kidney tumors and is thought to be more aggressive. Clinical management of these patients should be different from the standard treatment options. The aim of our study was to identify clinical features and treatment options in patients with Bellini duct carcinoma.

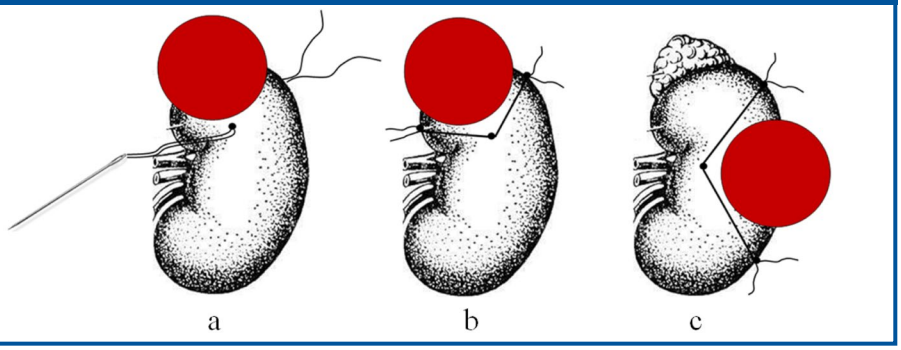
Materials and Methods: Between 2008 and 2016 there were performed 1,648 surgical interventions due to kidney tumors in our department. Histologically, carcinoma of the renal tubules was diagnosed in 27 (1.6%) patients, which became the subject of our study. The age of patients ranged from 28 to 69 years (54.3 ± 11.8). Men\women ratio was 16 (59.3%) \ 11 (40.7%). Tumor size ranged from 24 to 140mm (59,87 ± 25,2). The total amount of points according to R.E.N.A.L. scores - from 7 to 12 points (9.1 ± 2.1) with high-risk patients up to 59.3%. The remaining functioning parenchyma volume on the side of lesion ranged from 25 to 99% (64.4 ± 22.8). Metastatic lymph node lesion was found in 16 (59.3%) patients, in 6 (22.2%) – lung metastasis, one (4.8%) case had affected ipsilateral adrenal gland. In 13 (48.1%) cases kidney resection was performed, in 14 (51.9%) - nephrectomy, supplemented by regional lymph node dissection - in 16 (59.3%) cases, adrenalectomy - in 6 (22.2%).

Results: Patients complaints were: in 15 (55.5%) – pain, in 13 (48.1%) - paraneoplastic syndrome (hypertension, weight loss, pyrexia, anemia), in 8 (29.6%) - hematuria. According to NCIU nephrometry: 12 (44.4%) patients had centrally located tumor (N), 9 (33.3%) - laterally (C), 6 (22.2%) – in the upper (U) or lower pole (I), crossing interpolar lines in 77.7% of cases (p <0,001). The period of observation ranged from 3 to 68 months (27.8 ± 22.7). Surgery type did not affect cancer specific survival (p> 0.3). Death associated with progression occurred in 3 (50%) patients with metastatic cancer and 3 (14.3%) patients with M0 during a first year follow up. Anoth-

MP-14.12, Figure 1.



MP-14.13, Figure 1.



er 2 (9.5%) M0 patients died 18 and 21 months after surgery respectively. In 14 (51.9%) cases disease progression affected visceral organs during 3 - 32 month period, among which 11 (78.6%) during the first year of observation. In one (3.7%) patient 20 months after resection a local recurrence was diagnosed, which led to further nephrectomy. Average progression free survival was 21.7 months. Median overall survival has not yet been reached.

Conclusion: Tubular carcinoma of the kidney in 55.5% of cases debuts with pain, in 48.1% - paraneoplastic syndrome, in 29.6% - hematuria and in 77.7% - centrally located. Disease often (59.3%) spreads to regional lymph nodes. Type of surgery does not affect survival. Accounting all the features a better post-operative monitoring should be conducted in order to diagnose early progression.

MP-14.17

Efficiency of the Renal Cancer Specialist Multidisciplinary Team Meeting: Results from 1500 discussions

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Introduction and Objective: In the UK, all cancer cases must be reviewed at multidisciplinary team (MDT) meetings. We report on the efficiency of the renal cancer specialist MDT (sMDT) meeting at our high-volume specialist centre.

Materials and Methods: We conducted descriptive analysis of 1500 cases discussed from 02/09/2015 onwards at the renal cancer sMDT meeting, a weekly meeting with 15 core and 18 extended members where cases from 11 referring hospital trusts are discussed. The estimated average cost of the meeting was calculated as the number of hours members required to prepare and attend the meeting, using the mid-point of pay band attributable to the attendees (NHS pay scales 2015). The cost per meeting, per case, and per patient was calculated. The annual cost extrapolated.

Results: One thousand five hundred discussions took place over 34 meetings (02/09/2015 to 20/04/2016) and represented a cohort of 933 patients: 61.7% male (n=576); mean age 63.8 (IQR 24; range 14-96). One hospital trust referred the majority of patients (n=538, 57.7%). Most patients were referred by urology (n=720, 77.3%). Just above a quarter of discussions (n=399, 26.6%) represented new referrals. Each patient had their case discussed a mean of 1.6 times (range 1-7), with a majority of patients being discussed once (n=563, 60.3%). Only 100 discussions (6.7%) were deferred to subsequent meetings due to incomplete clinical details or unavailability of imaging scans or path reports. 11.1% (n=166) of cases were discharged from care. The estimated average cost of the meeting was: £130,875 per year, £2,517 per meeting, £57 per case discussed, and £92 per patient.

Conclusion: An average of 44 cases was discussed per meeting. One discussion was usually sufficient to decide management, deferral of cases was uncommon and, given the low discharge rate, one can infer that referrals to the meeting were appropriate. In a high volume centre, the cost per case was modest and represented good value in providing a focused decision making structure for renal cancer patients.

MP-14.18

Kidney Resection in Patients with Urotelial Cancer

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Introduction and Objective: Kidney resection in patients with urotelial tumors is a rare type of surgery and can be performed only in cases of localized small tumors of the calyx when renal function is preserved. The aim of our study was to evaluate short and long term functional and oncological outcomes of patients that underwent kidney resection due to urotelial tumors.

Materials and Methods: Retrospective analysis of 87 patients with upper urinary tract cancer that were treated in our department from 2008 to 2017. Average age was 66.3 + 5.4 years. Men\women ratio is 68 (78 %) / 19 (22 %). Conservative surgery was conducted in 24 (27.5%) cases, among which 6 (6.8%) underwent kidney resection and became the object of our study.

Results: Average observation period was 28.4 + 18.2 months. All patients had localized ureteral tumors with lesion area that did not exceed 50% of palvicalyceal system. The preoperative planning included CT imaging analysis with measurement of expected remain parenchyma volume. Tumors located in the lower segment calyces in 3 patients, in middle segmen - in 1 case and in upper segment - in 2. According to dynamic renal scintigraphy average unilateral kidney GFR prior to surgery was 19.6 + 5.2 ml/min, serum creatinine level - 1.16 + 0.26 mg\dl. All patients underwent resection of the affected calyx with the segment were it was located. Perioperative flexible pyeloscopy was conducted through the incision hole in the pyeloureteral segment

that additionally helped to margin the lesion. In cases of upper pole resection renal cavities were sutured, but when tumor located in the middle or lower segment a reconstruction of pelvicalyceal system was used. All surgical procedures were conducted without ischemia. Average blood loss was 564 + 178 ml. There were no early surgical complications. According to dynamic renal scintigraphy average unilateral kidney GFR 3 months after surgery was 15.8 + 4.8ml\min (p = 0.68), serum creatinine level - 1.21 + 0.21 mg\dl (p = 0.43).

There were no local relapse cases. In 1 patient there was diagnosed a decrease of unilateral GFR below 10 ml\min.

Conclusion: Although kidney resection in patients with pelvicalyceal urotelial tumors is a complex surgical procedure it preserves unilateral and total glomerular filtration rate. Early diagnosed ureteral tumors of the renal cavities can lead to conservative surgery and affect functional outcomes of the treatment.

MP-14.19

Lymphovascular Invasion Is a Stage-Specific Risk Factor for Systemic Recurrence after Nephroureterectomy in Patients with Upper Tract Urothelial Carcinoma

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Dept. of Urology, Kaohsiung Chang Gung Memorial Hospital, Kaohsiung City, Taïwan

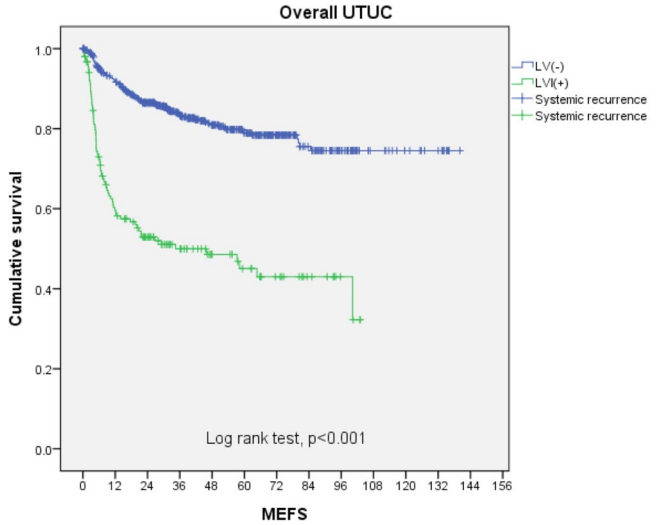
Introduction and Objective: To clarify the oncological outcomes of lymphovascular invasion (LVI) in different clinical stages in patients with upper tract urothelial carcinoma (UTUC) after nephroureterectomy.

Materials and Methods: We retrospectively reviewed patients who underwent nephroureterectomy for UTUC from 2005 to 2013 without adjuvant or neoadjuvant chemotherapy. The perioperative parameters included age, gender, smoking, clinical stage, pathological grade, tumor location, pathological features and systematic recurrence. The parameters were analyzed in Cox proportional hazards regression and Kaplan-Meier analysis. Organ-confined disease was defined as AJCC/UICC stage II or lower.

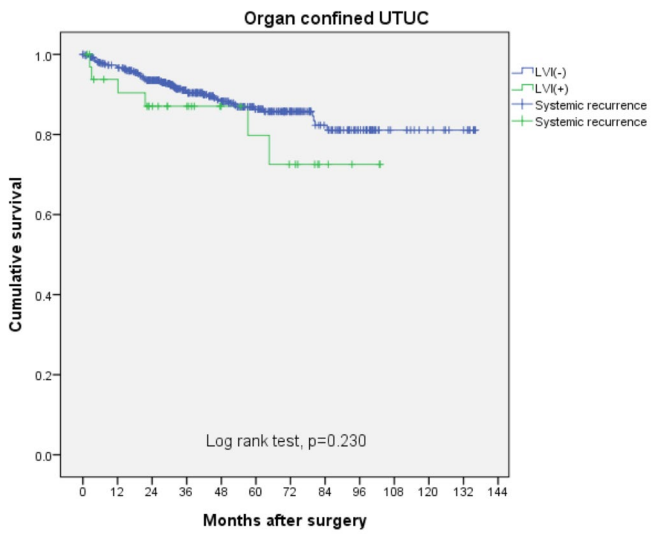
Results: A total of 730 patients received nephroureterectomy for UTUC median follow up 44.8 months in the cohort, there were 153 (21.0%) showed LVI in the pathology report. The primary end point in this study is systemic disease recurrence after surgical intervention. Multivariate Cox regression analysis showed stage, smoking, and LVI were significant risk factors for systemic recurrence. Kaplan-Meier analysis revealed there were no significant difference regarding to systemic recurrence in organ confined UTUC according to the presence of lymphovascular invasion (p=0.230). By contrast, lymphovascular invasion is independently associated with systemic disease recurrence in non-organ confined UTUC (p=0.009).

Conclusion: Lymphovascular invasion is a stage-specific risk factor for systemic recurrence for UTUC patients after nephroureterectomy. Non-organ confined disease with LVI indicates poor prognosis and it might be an important indicator for early adjuvant chemotherapy intervention.

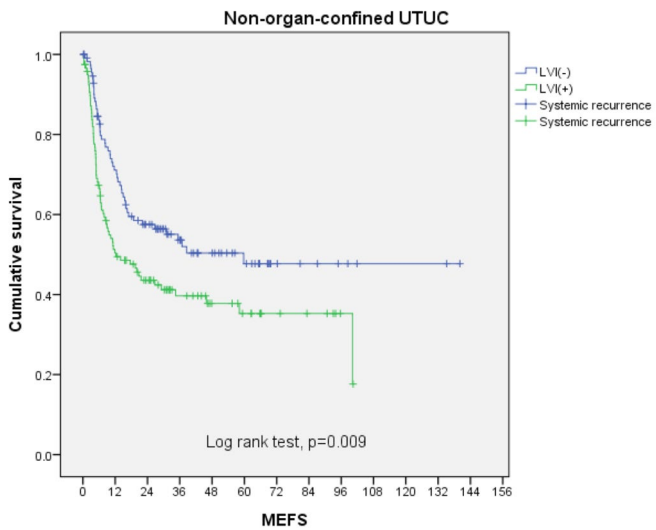
MP-14.19, Figure 1.



MP-14.19, Figure 2.



MP-14.19, Figure 3.



Moderated ePosters Session 15 Prostate Cancer: Basic Mechanisms and Advanced Disease

Sunday, October 22
1605–1735

MP-15.01

Role of Growth Hormone-Releasing Hormone on Prostate Cancer

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[1]Dept. of Urology, University Hospital Principe De Asturias, Alcala De Henares, Madrid, Spain; [2]Dept. of Systems Biology, University of Alcala, Madrid, Spain

Introduction and Objective: The involvement of growth hormone-releasing hormone (GHRH) and its receptors in several relevant processes that contribute to prostate cancer progression has been previously described. However, the role of such a neuropeptide on cell transformation through epithelial-mesenchymal transition (EMT) is still unknown. The aim of this work was to compare the expression of GHRH receptors (pGHRH-R) and their splice variants (SVs) as well as to study the carcinogenic potential of GHRH on human prostate cells.

Materials and Methods: We used the non-malignant human prostate epithelial cell line RWPE-1. The expression of GHRH receptors (GHRH-R) and their splice variants (SVs) was evaluated by means Western blot analysis and Immunocytochemistry. In order to assess the effect of the neuropeptide on tumorigenic capability, we exposed non-tumour cells in the absence or presence of 0.1 mM GHRH for 24 h. Then, 1 x 107 cells were injected subcutaneously into the flank of nude mice. Animals were divided into two groups: control group (ten mice) and GHRH group (eight mice). Tumour volume was assessed every week. Experimental procedures are carried out according to Spanish Law 32/2007, Spanish Royal Decree 1201/2005, European Directive 609/86/CEE and European Convention of Council of Europe ETS 123.

Results: Higher expression levels of pGHRH were detected in RWPE-1 as compared with levels of SVs. Tumour masses were evident in seven of the eight mice injected with RWPE-1 cells exposed to GHRH.

Conclusion: GHRH acts as a proliferative agent in RWPE-1 cell transformation conceivably through epithelial-mesenchymal transition (EMT), reinforcing GHRH role in prostate tumorigenesis.

MP-15.02

Demystifying the Mechanistic and Functional Aspects of RNA Activation with Double-Stranded Rnas in Human Prostate Cancer Cells

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Dept. of Urology, Institute of Urology, Tongji Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, China

Introduction and Objective: The recently identified phenomenon of double-stranded RNA (dsRNA)-mediated gene activation (RNAa) has been studied extensively, as it is present in human, mouse, and Caenorhabditis elegans, suggesting that dsRNA-mediated RNAa is an evolutionarily conserved mechanism. Previous study showed that dsP21-322 has the capacity to induce tumor suppressor gene p21 expression in human prostate cancer cells. Nonetheless, the role of dsRNAs in the activation of gene expression, including their target molecules and associated key factors, remains poorly understood.

Materials and Methods: In this study, human prostate cancer cell lines PC-3 and DU-145 as our research object. Oligonucleotides were used to overexpress dsRNAs and dsControl. Real-time PCR and western blot were used to detect genes' mRNA and protein expression, respectively. Using fluorescence microscopy and examined the kinetics of dsRNA subcellular distribution. Using a well-characterized antibody that recognizes biotin protein, we performed Chromatin immunoprecipitation (ChIP) to detect the molecular target for dsP21-322. Luciferase reporter assay were further performed to verify dsRNAs target molecules. Furthermore, Co-immunoprecipitation, sliver-staining, Tandem mass spectrometry and ChIP assay were carried out to identify unknown proteins and whether histone modification are involved in saRNA-mediated p21 expression.

Results: We demonstrated that dsRNA-mediated p21 induction in human cell lines is a common phenomenon. This process occurs at the transcriptional level and that the complementary p21 promoter is the intended dsRNA target. Additionally, we recognize that several heterogeneous nuclear ribonucleoproteins (hnRNPs) associate with the dsP21-322. Further study identify that hnRNPA2/B1 interact with the saRNA in vivo and in vitro and depletion of hnRNPA2/B1 abrogates the dsP21-322 activity. Importantly, ChIP assay indicated that p21 activation was accompanied by an increased enrichment of AGO and trimethylation of histoneH3K4 at dsRNAs-targeted genomic sites.

Conclusion: These data systematically reveal the mechanistic and functional aspects of ncRNA-mediated p21 activation in human prostate cancer cells, which might be a useful tool to analyze gene function and aid in the development of novel drug targets for prostate cancer therapeutics.

MP-15.03

EMT And CD133 Expression of Circulating Tumor Cell in Predicting Prognosis and Docetaxel-Based Treatment Effect in Metastatic Castration-Resistant Prostate Cancer

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Dept. of Urology, Fudan University Shanghai Cancer Center; Dept. of Oncology, Shanghai Medical College, Fudan University, Shanghai

Introduction and Objective: Although circulating tumor cell (CTC) enumeration in peripheral blood has already been validated as a reliable biomarker in predicting prognosis in metastatic castration-resistant prostate cancer (mCRPC), patients with favorable CTC counts (CTC < 5/7.5 ml) still experience various survival times. In this study, we aimed to explore EMT and CD133 expression of circulating tumor cell in predicting prognosis and treatment effect in metastatic castration-resistant prostate cancer

Materials and Methods: From January 2015 to October 2016, we collected peripheral blood from 50 mCRPC patients treated by docetaxel based chemotherapy and enumerated CTC in these blood samples using CanPatrolTM System. RNA in Situ Hybridization (RNA-ISH) was performed with Epithelial tumour cells (E+) specific probes (EpCAM, CK5/7/18/19, CDH1), Mesenchymal tumour cells (M+) specific probe (Twist, CDH2, SERPINE1, Vimentin) and CD133 specific probes (EpCAM, CK5/8/18/19, Vimentin, Twist) on isolated CTCs cells. PSA progression-free survival (PSA-PFS) and treatment response status were recorded in the follow-up.

Results: Confirmed PSA response was observed in 27(54.0%) patients treated by docetaxel based chemotherapy. The confirmed PSA response rate in M+CTCs patients was 33.3% (8/24), which was significantly lower than that of E+/E/M+CTCs patients 73.1% (19/26) (p =0.005). Moreover, patients with high/middle-level CD133 expression had a lower PSA response rate (29.4%, 5/17) compared with patients with non/low-level CD133 expression (66.7%, 22/33; p = 0.017). Also, there were significantly different PSA-PFS between M+CTCs and E+/E/M+ subpopulation (2.5 vs. 7.3months, p = 0.008). High/middle-level CD133 expression indicated poor PSA-PFS in mCRPC patients than non/low-level CD133 expression (2.8 vs. 6.9months p = 0.043).

Conclusion: Detection of peripheral blood EMT and CD133 gene expression could predict PSA-PFS and docetaxel-based treatment effects in mCRPC patients.

MP-15.04

Polymer Delivered, Subcutaneously Administered Leuprolide Acetate Achieves Effective Testosterone Suppression below Castration Levels for All Formulations across All Weight and Age Groups

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TOLMAR Pharmaceuticals Inc., Lincolnshire, United States

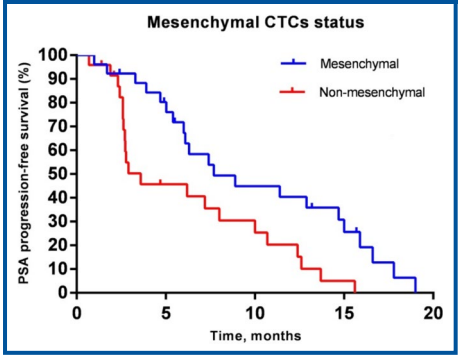
Introduction and Objective: Polymer-delivered, subcutaneous leuprolide acetate (SC-LA) has previously been shown to suppress serum testosterone (T) levels in prostate cancer patients to≤20 ng/dL. Luteinizing hormone-releasing hormone agonists are currently dosed independently of body weight (BW) or age. With the importance of achieving low T during androgen deprivation therapy, it is of interest to understand whether patient specific factors such as age or weight may need to be taken into consideration when choosing a therapy. The objective is to determine if patient weight and age correlates with the pharmacodynamic profile of SC-LA in pivotal trials of all currently available formulations (1, 3, 4, and 6-month doses).

Materials and Methods: In 4 open-labels, single-arm, fixed dose, pivotal studies, male prostate cancer patients (age 40-86) was treated with 1, 3, 4, or 6-month SC-LA formulation. Blood was sampled at screening, baseline, 2, 4, 8 hours post dosing, days 1, 2, 3, 7, and every other week until end of each study. Serum T levels were measured by radioimmunoassay (limit of quantitation is 3 ng/dL). Data were pooled across 4 studies and descriptive statistics were used to summarize concentrations at each time point and to determine time to T suppression.

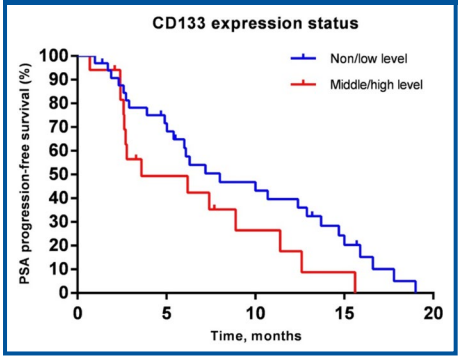
Results: The mean weight or age of patients was similar across the four studies. When patients were pooled by weight or age, the median serum T levels for all weight subgroups or all age subgroups achieved and maintained castration level (T≤20 ng/dL) by week 4 (Table 1) until end of the study.

Conclusion: These results demonstrate that all SC-LA dose formulations consistently achieve and maintain T suppression below 20 ng/dL across all weight and age subgroups, including those with the highest BW (>90 kg) and age (>80 years). This suggests that SC-LA may not require dose adjustments due to weight or age factors.

MP-15.03, Figure 1.



MP-15.03, Figure 2.



MP-15.05

Cytoreductive and Palliative Radical Prostatectomy, Lymphadenectomy and Bilateral Orchiectomy in Advanced Prostate Cancer with Oligo-And Polymetastases: Results of Feasibility and Case-Control Study, our Initial Experience

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Shahid Labbafinejad Medical Center, Urology & Nephrology Research Center, Shahid Beheshti University of Medical Sciences, Tehran, Iran

Introduction and Objective: We aim to show the role of radical prostatectomy, lymphadenectomy and bilateral orchiectomy instead of androgen deprivation therapy (ADT) as an alternative treatment in patients with advanced prostate cancer with oligo-and polymetastases in their bones.

Materials and Methods: Radical prostatectomy, extended lymphadenectomy and bilateral orchiectomy was done in 24 patients with advanced prostate cancer with bone metastases (group 1). The number of 23 patients with similar characteristics received ADT without local therapy as control group (group 2). The patients have been followed with prostate specific antigen (PSA), whole body bone scan and other imaging and laboratory tests if necessary.

Results: The mean age in patients group 1 was 61 and in group 2 was 67 years old. Mean follow up was 12 months. Biochemical relapse occurred in 4 patients in group 1 and in 16 patients in group 2 (p=0.001). Bone metastasis decreased in 5 patients in group 1 and only in 2 patients in group 2 while it was increased in 3 patients in group 1 and in 5 patients in group 2. All patients in group 1 are voiding continent except one patient needed cutaneous ureterostomy because of contracted bladder, while in group 2 trans-urethral resection of prostate was done in 1 patient, permanent Foley catheter was needed in 4 and bilateral percutaneous nephrostomy was done in one patient. Recto-vesical fistula occurred in one patient during surgery and he is waiting for repair. DVT occurred in two after surgery and they are under medical treatment. Biochemical failure was more prevalent in patients with poly metastases in comparison to oligometstases in both groups. Two patients died in each group because of metastatic prostate cancer.

Conclusion: Cytoreductive and palliative radical prostatectomy, extended lymphadenectomy and bilateral orchiectomy is feasible in metastatic advanced prostate cancer and seems to improve quality of life comparing ADT and might decrease biochemical relapse. Further studies and more follow up is necessary.

MP-15.06

PSMA Positivity in Metastatic Prostate Cancer: A Morphological Bias?

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Introduction and Objectives: Variation in the histopathological morphology of prostate cancer has been shown to be associated with heterogeneous clinical outcomes relating to disease progression. The recent utilisation of Prostate specific membrane antigen (PSMA) positron emission tomography (PET) to investigate biochemical recurrence (BCR) has increased our ability to map out metastatic disease to lymph nodes. We aim to analyse PSMA-PET positive lymph nodes to characterise their morphological subtype and relationship to PSMA-PET avidity.

Materials and Methods: Patients included were those having undergone salvage pelvic lymph node dissection for PSMA-PET avid pelvic metastatic disease, performed for BCR following definitive treatment of prostate cancer. Pathology examined for lymph node yield, presence of prostate cancer and morphological subtype.

Results: Fourteen patients with BCR and positive PSMA-PET scans post definitive treatment of prostate cancer underwent pelvic lymph node dissection and formal histopathological examination. Metastatic prostatic adenocarcinoma was identified in 13 cases (93%). Nine of the 13 cases with metastatic disease (70%) exhibited prominent cribriform architecture, with six of these also displaying features of ductal adenocarcinoma. One case with a yield of thirty-eight lymph nodes showed no evidence of metastatic disease.

Conclusion: In the setting of BCR, these findings provide supportive evidence that PSMA-PET scanning can identify metastatic prostatic adenocarcinoma in the pelvic nodes. Importantly, this study shows that PSMA-PET will identify a specific morpho-type of prostatic adenocarcinoma, namely adenocarcinoma with a cribriform architecture, which in this series was most commonly seen with ductal adenocarcinoma and also acinar adenocarcinoma. However, a positive PSMA-PET scan may also occur in patients without nodal metastatic disease, as seen here in one case. Further examination of PSMA-PET positive nodal pathology is required to fully characterise this developing technology.

MP-15.04, Table 1. Median Serum T Levels at Week 4

	Weight (n=429)			Age (n=437)		
Subgroup (n)	<80 kg (167)	80-<90 kg (127)	≥90 kg (135)	<70 years (126)	70-<80 years (210)	≥80 years (101)
Median Serum T	13 ng/dL	13 ng/dL	12 ng/dL	16 ng/dL	12 ng/dL	12 ng/dL

MP-15.07

Salvage Extended Lymph Node Dissection in Patients with Low Volume Lymph Node Recurrence after Primary Local Treatment: Multicenter Experience

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Introduction and Objectives: To assess results of salvage pelvic lymph node dissection (PLND) in prostate cancer (PC) patients (pts) with biochemical recurrence after primary local treatment and confirmed solitary lymph node (LN) metastases.

Materials and Methods: Multicenter retrospective analyses of 57 PC pts with biochemical recurrence after radical therapy and oligo-metastatic LN, verified with 11C-choline positron emission tomography/computed tomography (PET/CT), was performed. Primary local therapy and salvage surgery in cases of LN disease progression was performed in 3 centers in Russia: 22 (38.6%) pts were treated in Moscow Oncological Research Institute, 24 (42.1%) – in Russian Scientific Radiological and Surgical Center and 11 (19.3%) – in National Research Institute of Oncology. Progression after radical prostatectomy (RPE) with PLND was diagnosed in 44 (77.2%) pts; in 7 (12.3%) pts solitary LN metastases were verified after external beam radiation therapy and in 6 (10.5%) pts – after brachytherapy. Only patients with oligo-metastatic LN were included in the study. Median number of positive LN verified with 11C-choline PET/CT was 1 (1-3). Mean pts's age was 63.2±6.9 (54-74) years; mean PSA level before salvage PLND was 6.6±5.8 (0.6-16.4) ng/ml. Biopsy Gleason score was ≤6 in 25 (43.9%) pts, 7 (3+4) – in 13 (22.8%), 7 (4+3) – in 9 (15.8%) and 8-10 – in 10 (17.5%). Mean time from primary local therapy to salvage PLND was 23.6±26.4 (9-142) months. Open salvage lymphadenectomy of positive lymph nodes with extended PLND of residual LN was performed. Hormonal therapy (HT) was administered only in pts with PSA >0.2 ng/ml in a month after the operation. Complete biochemical remission was defined as PSA level ≤0.2 ng/ml.

Results: Mean follow-up time after salvage PLND was 16.8±12.3 (6-48) months. Median number of LN removed was 16 (13-40). LN metastases were verified in 53 (93%) pts. In 4 (7%) pts histological examination of removed LN did not reveal any metastases. In these pts HT was administered. In 24 (45.3%) pts extended PLND revealed additional metastases, which were not diagnosed preoperatively with PET/CT. Median number LN metastases removed was 3 (1-22). A PSA decline was observed in 47 (82.5%) pts with histologically confirmed LN metastases. PSA decrease ≥50% and ≥90% was verified in 38 (66.7%) and in 13 (22.8%) pts, respectively, in a month after salvage PLND. Median PSA level in a month after salvage PLND was 0.35 (0.08-3.96 ng/ml) ng/ml. Complete biochemical remission (PSA ≤0.2 ng/ml) was observed in 11 (23.4%) patients with a mean follow-up 23±13.8 (5-40) months after salvage PLND without additional HT. 3-year biochemical progression-free survival was 21.0±9.4%. 5-year overall survival was 92,8±6,8%. PSA decrease ≥90% in a month after salvage PLND (OR=1.6; 95%CI=1.2-2.1; p=0.002) was an independent predictor of good outcome after salvage surgery.

Conclusions: Salvage PLND is a feasible procedure in patients with solitary LN metastases after primary local therapy. In selected patients it can result in a long-term complete biochemical remission (median 2 years), without adjuvant therapy.

MP-15.08

Salvage Partial Brachytherapy for Prostate Cancer Recurrence after Primary Brachytherapy

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Introduction and Objectives: To assess the effect of salvage partial brachytherapy after primary 125-iodine low-dose rate brachytherapy with or without external beam radiotherapy.

Materials and Methods: Between 2003 and 2010, a total of 616 patients underwent low-dose rate brachytherapy-based therapy for clinically localized prostate cancer at Jikei University Hospital in Tokyo, Japan. Eight patients had underdosed areas identified at initial low-dose rate brachytherapy corresponding to the positive biopsy sites after biochemical recurrence. All were confirmed to have only localized recurrence, and seven patients were treated with salvage partial low-dose rate brachytherapy for local recurrence.

Results: Median follow up after initial low-dose rate brachytherapy for these seven patients with isolated local recurrence was 139 months (range 106–147 months). The seven retreated patients tolerated the salvage partial low-dose rate brachytherapy well, and showed a decrease in prostate-specific antigen level at follow up. However, four patients later developed biochemical progression. The median time to biochemical recurrence was 54.7 months (17 to 81 months) in all patients. One patient died of prostate cancer at 74 months after salvage partial brachytherapy. In addition, one case is under follow-up observation with additional cryotherapy.

Conclusion: Salvage partial low-dose rate brachytherapy for biopsy-proven localized prostate cancer recurrence appears rational, technically feasible and safe. However, four of seven patients had biochemical progression after salvage partial low-dose rate brachytherapy. Optimal patient selection is of utmost importance for long-term success. Larger studies with longer follow up are warranted.

MP-15.09

Robot Assisted Radical Prostatectomy in Patients with Oligometastatic Prostate Cancer Baldev Singh Aulakh

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Introduction and Objectives: There is growing interest in the role of local treatment in metastatic prostate cancer. However, there is a lack of data for robot assisted radical prostatectomy as therapy in this setting. Thus, we investigated perioperative and oncologic outcomes of robot assisted radical prostatectomy in patients with oligometastatic prostate cancer.

Materials and Methods: We retrospectively evaluated 38 patients with oligometastatic prostate cancer treated with robot assisted radical prostatectomy between 2007 and 2014 at a single high-volume tertiary care center. Oligometastatic disease was defined as five or fewer hot spots on bone scan with or without suspicious pelvic or retroperitoneal nodal involvement at preoperative imaging studies. Perioperative outcomes, radiographic progression-free, cancer-specific, and overall survival were evaluated.

Results: Median follow up duration was 44.5 months. Median patient age at surgery was 65 years. Median PSA at diagnosis was 39.0 ng/ml. Median operation time and console time were 147 and 90 minutes, respectively. Median estimated blood loss was 300 ml. Length of hospitalization and catheterization were 5 days and 10 days, respectively. Three patients (7.9%) received blood transfusions and 2 patients (5.3%) experienced grade 3 postoperative complications. Overall, 37 (97.4%) and 11 (28.9%) patients had T3-4 disease and lymph node metastasis. Five year radiographic progression-free, cancer-specific, and overall survival rates were 54.5%, 78.3, and 63.8%, respectively.

Conclusions: Our findings support the feasibility and effectiveness of robot assisted radical prostatectomy in a highly selected cohort of prostate cancer patients with bone metastases.

MP-15.10

Salvage Cryoablation for Recurrent Prostate Cancer Following Radiation Therapy: Long-Term Outcomes from a Combined Analysis of Two Centers

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Introduction and Objective: With a dearth of data on long-term outcomes of salvage cryotherapy (SC) for locally recurrent prostate cancer following RT, a combined analysis of SC patient data from two centers on their long-term outcomes was performed.

Materials and Methods: Patients undergoing SC for biopsy-proven, localized radiorecurrent prostate cancer (RRPCa) from 1990 to 2004 were prospectively accrued. Preoperative characteristics, perioperative morbidity, and postoperative data were reviewed from two prospectively maintained databases. The primary outcomes were overall survival (OS) and disease-specific survival (DSS). Secondary outcomes were metastasis-free survival (MFS), freedom from castrate-resistant prostate cancer (CRPC), and freedom from androgen deprivation therapy (ADT).

Results: Two hundred and sixty eight patients were identified, with a median follow-up of 10.3 years. One hundred and ninety nine (74.3%) experienced complications, including 381 Clavien I-II events and 55 Clavien III events. At 10 years, 69% had freedom from

ADT, 76% had freedom from CRPC, and the MFS rate was 76%. The 10-year DSS rate was 81%, and the 10-year OS rate was 77%. Pre-salvage prostate-specific antigen level of >5 ng/mL was associated with an increased risk of developing CRPC but was not associated with MFS, DSS, or OS (see figures 1 &2). The use of neoadjuvant ADT was associated with decreased MFS and improved OS and DSS but did not affect freedom from CRPC (p<0.05).

Conclusions: Salvage cryotherapy for RRPCa appears to provide long-term freedom from ADT and CRPC, as well as MFS, DSS and OS in the majority of patients, with acceptable morbidity. Salvage cryotherapy is therefore a viable treatment option for localized RRPCa.

MP-15.11

Improved Survival of Men with M1 Prostate Cancer Treated with Androgen Deprivation Therapy and Prostatic Radiotherapy

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Introduction and Objective: There is growing interest in the possible prognostic impact of adding local therapies to androgen deprivation (ADT) for men with M1 prostate cancer (mPca). We evaluated the overall survival (OS) of men with mPca treated with ADT with and without prostatic external beam radiotherapy (RT) using our single institution database.

Materials and Methods: The Saitama Medical Center Prostate Cancer Database was queried for men with newly diagnosed mPca, all treated with ADT, with complete datasets for RT, surgery, chemotherapy, prostate-specific antigen (PSA) level, Gleason score, and metastatic sites. OS was analyzed using the Kaplan-Meier method, log-rank test, Cox proportional hazards models, and propensity score-matched analyses.

Results: From 1999 to 2016, 234 men with mPca were identified, including 56 (24%) receiving prostatic RT. At a median follow-up of 3.2 years, the addition of prostatic RT to ADT was associated with improved OS on univariate (p < 0.001) and multivariate analysis (hazard ratio, 0.335; 95% CI, 0.114 to 0.860; p = 0.022) adjusted for age, year of diagnosis, PSA, hemoglobin, alkaline phosphatase, lactate dehydrogenase, presence of Gleason pattern 5, T stage (1-2/3/4), N stage (0/1), M stage (presence of visceral metastasis), chemotherapy administration, ECOG performance status (0-1/2-4), and history of prostatic RT. Propensity score analysis with matched baseline characteristics (n = 66) demonstrated that patients treated with prostatic RT plus ADT had better OS (p = 0.007) and cancer-specific survival (p = 0.026) when compared to those treated with ADT alone.

Conclusion: In this single institution contemporary analysis, Japanese men with mPca receiving prostatic RT and ADT lived substantially longer than men treated with ADT alone. Prospective trials evaluating local therapies for mPca are warranted.

MP-15.12

The Comparison of Prognoses between Radiotherapy and Radical Prostatectomy in Patients with High Risk Localized or Locally Advanced Prostate Cancer Treated with Neoadjuvant Hormonal Therapy

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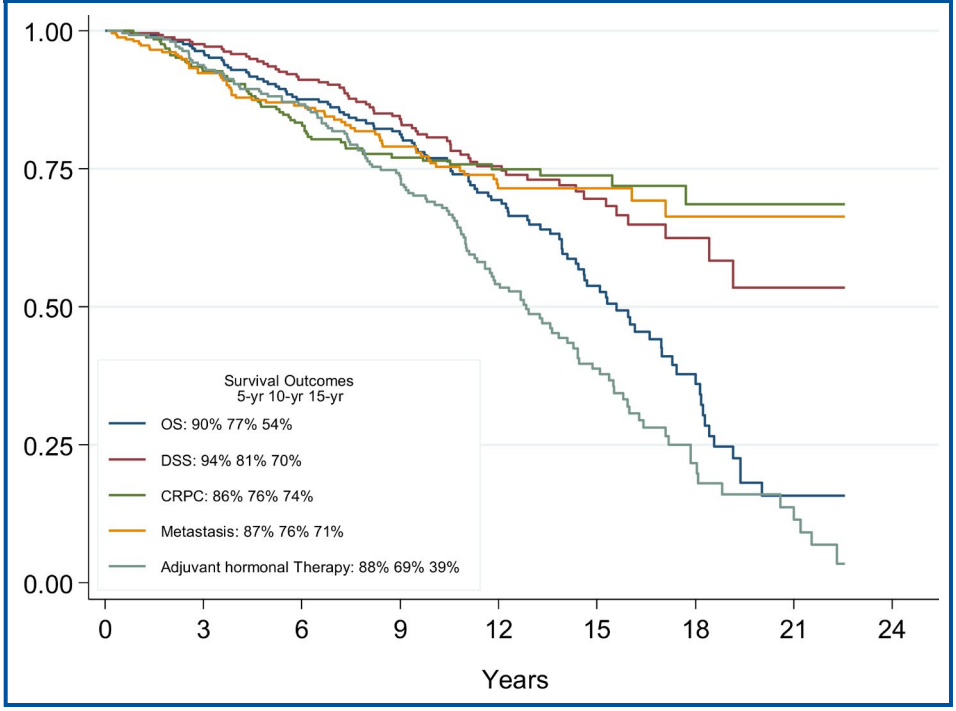
Introduction and Objective: Individuals with prostate-specific antigen (PSA) levels of ≥20 ng/mL, Gleason scores of ≥8, or clinical stage T2c/T3 tumors are defined as high-risk prostate cancer (PC) patients. Treatment options for high-risk PC include external beam-radiation therapy (RT) with androgen-deprivation hormonal therapy; trimodal therapy with a combination of brachytherapy, RT, and hormonal therapy; and radical prostatectomy (RP) with neoadjuvant or adjuvant therapy. To date, no sufficiently large-scale, prospective, randomized clinical trials have compared the abovementioned treatment options. Thus, optimal management strategies for high-risk PCa patients have not been established. Therefore, this study was aimed to compare the prognoses between patients with high risk localized or locally advanced prostate cancer (PCa) treated with either radiotherapy (RT) or radical prostatectomy (RP) after a median 3.6-month neoadjuvant hormonal therapy (NHT).

Materials and Methods: Between 2003 and 2014, a total of 255 patients including 83 RT and 172 RP were enrolled to retrospectively analyze their clinical data after NHT in single institution. The definitions of BCR in each group were that PSA increase > 2 ng/mL higher than the PSA nadir value, regardless of the blood concentration of the nadir in RT group, is defined, whereas a PSA level 0.2 ng/ml following RP after a PSA "free" interval is defined in RP group. The comparison of time to biochemical recurrence (BCR), local recurrence at pelvis (LC), metastasis, clinical painful symptom progression (CPSP), castration-resistant PC (CRPC) and overall survival (OS) were statistically assessed between RT and RP using Kaplan-Meier method and log rank test with a significant p-value<0.05.

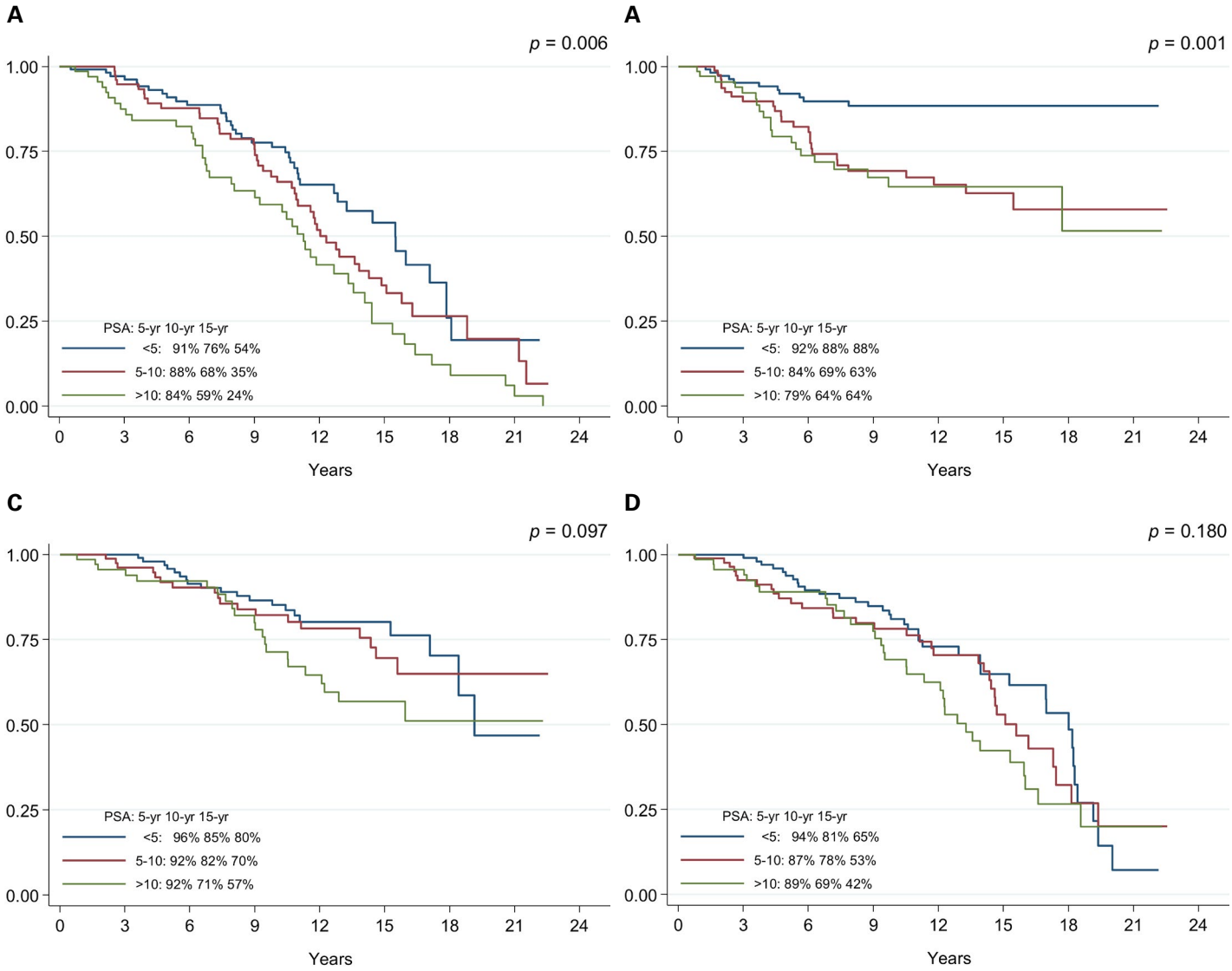
Results: The overall incidence of BCR, LC, metastasis, CPSP, and CRPC were 61.2%, 17.6%, 9.0%, 4.7%, and 8.2%, respectively. The several baseline clinicopathological characteristics between RT and RP groups were significantly different in initial PSA, diagnostic age, nadir PSA and PSA level at BCR, time to adjuvant HT, number of BCR and of adjuvant HTx (p<0.05). The Kaplan-Meier test and log rank test showed insignificant differences between RT and RP groups for median time to BCR (RT 15.0 vs 14.0 months, p=0.242), local recur (26.0 vs. 37.0 months, p=0.285), metastasis (RT 38.0 vs RP 51.0 months, p=0.674) , CPSP (27.0 vs 47.0 months, p=0.583), CRPC (RT 39.1 vs RP 45.1 months, p=0.435) and to OS (mean 138.3 vs not reached till 150 months, p=0.794).

Conclusion: In spite of different baseline TNM stage, both RT and RP had insignificantly differential prognoses in patient with PC treated with NHT, except for local recurrence. Further studies with longer fol-

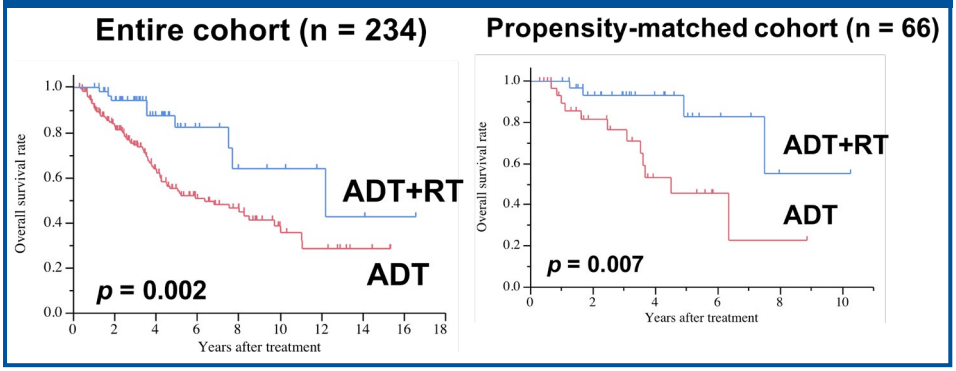
MP-15.10, Figure 1. Kaplan-Meier Survival Curve and 5-, 10-, and 15-Year Survival Rates for Overall Survival (OS), Disease Specific Survival (DSS), Development of Castrate Resistant Prostate Cancer (CRPC), Development of Metastasis (metastasis) and Time to Initiation of Adjuvant Androgen Deprivation Therapy



MP-15.10, Figure 2: Time to Initiation of ADT (a), Time to CRPC (b), DSS (c), and OS (d) Stratified by Pre-Salvage Cryotherapy PSA



MP-15.11, Figure 1. Overall Survival in Entire and Propensity-Matched Cohort



low-up duration and with large numbered patients would be required to discuss their prognoses.

MP-15.13

Clinical Activity of Abiraterone Acetate in Docetaxel-Naïve and Docetaxel-Pretreated Asian Patients with Metastatic Castration Resistant Prostate Cancer

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Introduction and Objective: This study aimed to investigate the clinical activity of abiraterone acetate in docetaxel-naïve and docetaxel-pretreated Asian patients with mCRPC.

Materials and Methods: We enrolled 103 (70.5%) patients received abiraterone without prior exposure to docetaxel and 43 (29.5%) patients received chemotherapy with docetaxel. The following clinical and pathological characteristics were analyzed: patient age at the time of abiraterone initiation, Eastern Cooperative Oncology Group (ECOG) performance status, serum levels of PSA, hemoglobin, alkaline phosphatase (ALP), lactate dehydrogenase (LDH) and albumin (ALB), Gleason score and clinical stage at initial diagnosis, site and extent of metastatic disease, and types of previous hormonal therapeutic regimens. Clinical end points were defined according to the Prostate Cancer Working Group 2 (PCWG2) criteria.

Results: The confirmed PSA response rate in docetaxel-naïve patients was 54.4% (56/103), which was significantly higher than that of docetaxel-pretreated patients 34.9% (15/43) (p = 0.047). In the Kaplan-Meier analyses, the median PSA progression-free survival, clinical or radiographic progression–free survival, and OS among docetaxel-pretreated patients was significantly different than docetaxel-naïve patients respectively (7.7 vs 14.0 months, p = 0.005), (12.5 vs 17.0 months, p = 0.003) and (18.0 vs 27.0 months, p = 0.016). A multivariate analysis indicated that only lower ALB and without confirmed PSA response were independent significant predictors for shorter OS.

Conclusion: As a result, this analysis indicated that the efficacy of abiraterone is quite good in both docetaxel-naïve and docetaxel-pretreated Asian mCRPC patients. Moreover, higher PSA response rate and longer median OS were observed in the docetaxel-naïve subgroup.

MP-15.14

Use of Palliative Medications before Death from Prostate Cancer: A Population-Based Study

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Introduction and Objective: We assessed the use of palliative medications before death from prostate cancer.

Materials and Methods: We included all Swedish men who died between 2009 and 2012 with prostate cancer as the main cause of death in the Swedish Cause of Death Register, totally 8516 men. The Prostate Cancer data Base Sweden (PCBaSe) was used to measure the proportion who received a prescription of androgen deprivation therapy, NSAID, paracetamol, opioids, glucocorticoids, antidepressants, anxiolytics, and sedative-hypnotics and the differences in treatment related to age, time since diagnosis, educational level, presence of close relatives, and comorbidities. We collected data from three years prior to death from prostate cancer, or from the date of diagnosis if time between diagnosis and death was shorter than three years.

Results: The proportion receiving opioids increased from 30 to 72% during the last year of life, and 68% received a strong opioid at time of death. Antidepressants, anxiolytics and sedative-hypnotics increased in proportions from 13 to 22%, 9 to 27%, and 21 to 33%, respectively. Older men had lower probability of receiving ADT (adjusted odds ratio (OR) 0.78; 95% confidence interval (CI) 0.61 to 0.99 for men > 85 years), opioids (OR 0.56; 95% CI 0.47 to 0.66 for men > 85 years), and anxiolytics (OR 0.74; 95% CI 0.63 to 0.88 for men > 85 years). Men without close relatives had lower probability to receive ADT (OR 0.64; 95% CI 0.52 to 0.80 for unmarried men without children) and opioids (OR 0.77; 95% CI 0.66 to 0.90 for unmarried men without children). The probability of receiving opioids was increased for men with low education (OR 1.43; 95% CI 1.25 to 1.64 for low education).

Conclusion: Our results indicate that older men and men without close relatives are disadvantaged with respect to treatment of cancer pain and need closer attention from health care providers. The psychological stress patients perceive in late stage disease is reflected in the increased use of pharmacological treatment of mood disorders. Early identification and better counselling may help to reduce this distress.

MP-15.15

Health-Related Quality of Life, Perceived Social Support, and Depression in Disease-Free Survivors of Surgically Treated Prostate, Kidney and Bladder Cancer: Comparison among Survivors and with the General Population

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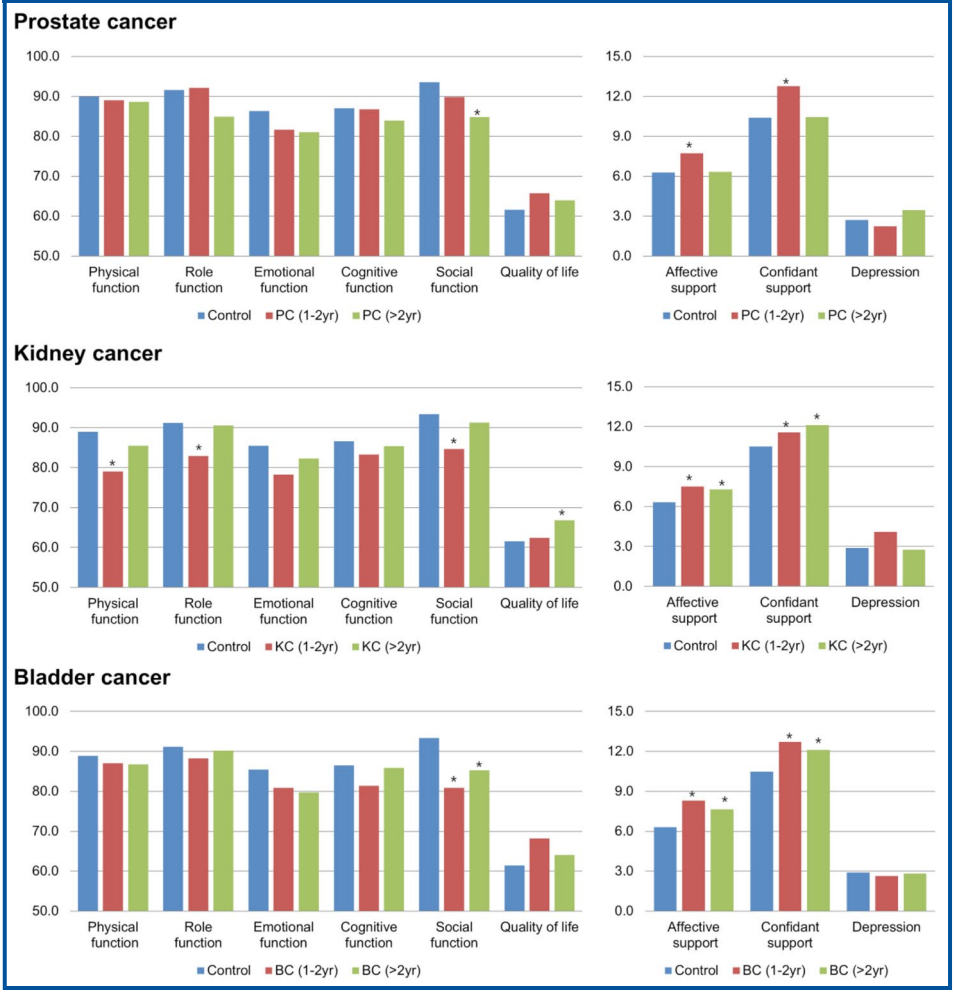
Introduction and Objective: Although the number of urological cancer (UC) survivors has increased and their health-related quality-of-life (HRQoL) became important issues, few studies adequately examined general QoL issues of UC survivors. We aimed to assess HRQoL of disease-free prostate cancer (PC), kidney cancer (KC) and bladder cancer (BC) survivors, and compare them with those from the general population.

Materials and Methods: A total of 331 UC patients (PC 114, 108 KC, and 109 BC) ≥ 50 years who had undergone curative surgery and no evidence of recurrence for at least 1 year after surgery were included. As a control, 1,177 subjects without a history of cancer were randomly selected from general Korean popu-

MP-15.15, Figure 1.



lation. HRQoL was compared among 3 UC survivors and between each type of cancer and general population with the EORTC QLQ-C30, Patient Health Questionniare-9 and Duke-UNC Functional Social Support Questionnaire.

Results: PC, KC, and BC survivors were not different with all domains of functioning and symptom scales, except for slight but significant difference in social functioning between KC and BC survivors (89.5 vs. 80.6, P=0.021). Three groups were neither different for depression nor functional social support. When compared to matched general population, PC and BC survivors showed lower social functioning and lower appetite problem than control, while KC survivors showed lower physical functioning as well as higher pain and dyspnea symptom. All three UC survivors reported higher financial difficulties, but also higher perceived social support than control. When examined by time elapsed from curative surgery, some different patterns were observed by cancer type (Figure 1).

Conclusion: While HRQoL issues were generally similar among disease-free UC survivors, different patterns were noted according to UC type, compared with general population. Our results will be valuable to both urologists and patients by providing HRQoL information following surgery, and planning future supportive care needs.

Residents' Forum

Sunday, October 22
1415–1735

RF-01.01

Allogeneic Hematopoietic Stem Cell Transplantation and Hemorrhagic Cystitis: Clinical Approach

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Introduction and Objective: The objective of this study was to evaluate the prevalence of hemorrhagic cystitis (HC) in patients undergoing allogeneic hematopoietic stem cell transplantation (AlloHSCT) and analyse the different risk factors involved in the duration and resolution of each HC episode.

Materials and Methods: Retrospective descriptive study of 92 patients undergoing alloHSCT between 2010 and 2013. Data analysed: Age, sex, hematologic disease, HSCT type, type of grouped HSCT, type of donor and preparation. Other data included the degree of hematuria classified according to Droller scale, time interval between transplantation and the onset of hematuria, episode duration and outcome, and its relationship with platelet level. We also assessed the impact of intravesical treatment with hyaluronic acid and positivity for urinary polyomavirus.

Results: Twenty-two episodes of hematuria were described in 15 patients. Polyoma BK viruria was detected in 63%. Positivity for polyomavirus in the urine does not seem to affect the outcome. Hematuria control was better in patients with higher platelets counts at the beginning and the end of the episode (p=0.016). The severity of HC did not impact on the probability of overall survival at 3 years (Grade I/II: 21% [95% CI, 2%-40%] vs. Grade III/IV: 12% [95% CI, 0%-27%], p=0.175).

Conclusion: In our study, the resolution of HC was associated with higher platelet counts and better immune reconstitution. The severity of hematuria didn't have impact on the overall survival or the transplant related mortality.

RF-01.02

Prospective Observational Study on Tolerability, Morbidity and Perception of Patient Undergoing Office Flexible Cystoscopy

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Introduction and Objective: Flexible cystoscopy is one of the most commonly performed procedures in the urology office setting. Pain, hematuria, lower urinary tract symptoms and urinary tract infection are the main adverse effects present during or after cystoscopy. While it has become a standard urology procedure, it is important to acknowledge patients feeling about it. The aim of this study is to evaluate patient's anxiety, tolerability, discomfort and perception when they go under procedure.

Materials and Methods: An observational, prospective, nonrandomized study was conducted on 251 patients subjected to a flexible cystoscopy from June 2015 to May 2016. All patients were allowed to watch the video screen together with the urologist, receive the same real-time explanation during the procedure and receive the same intraurethral anesthesic with lidocain 2%. A selfmade questionary was filled up by all the patients. The questionary includes: First or consecutive procedure; patients perception about: waiting time, medical and nursing attendance before and along procedure; feeling about the procedure (bothering, uncomfortable, painful) and symptoms after cystoscopy that includes: Pain score on an analog scale, as well as stinging, pollakiuria, fever and hematuria.

Results: Almost half (40%) of patients were the first cystoscopy to be submitted. Most (84%) did not seek prior information, and among those seeking information, 56% did not serve to reassure them. Satisfaction for the care received got a positive rating at 86%. The degree of discomfort during the test was low. After cystoscopy, most of the patients were asymptomatic. Most common discomfort were dysuria and pollakiuria.

Conclusion: Cystoscopy is a well-tolerated test with few side effects. A careful personal attention and prior information can help minimize discomfort during the procedure.

RF-01.03

Does the Use of Topical Anesthetic Gel Reduce Urethral Catheterization Pain? A Meta-Analysis

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Introduction and Objective: Urethral catheterization is one of the most common and painful invasive procedures performed in an outpatient or emergency setting. Topical anesthetic gel is applied to reduce discomfort. However, evidence is insufficient and the results from studies contradictory. We performed a meta-analysis of prospective, randomized, controlled trials on the efficacy of topical anesthetic gel (TAG) versus plain lubricant (PL) in reducing pain during urethral catheterization among adult male and female patients.

Materials and Methods: Systematic literature search was made up to September 2016 on the following electronic medical databases: OVID MEDLINE, EMBASE, SCOPUS, Cochrane Library, HERDIN, clinicaltrials.gov and WHO-International Clinical Trials Registry Platform. Three physician reviewers independently screened, identified and evaluated the eligible prospective randomized controlled trials (RCTs) according to the Cochrane Collaboration recommendations. At least two agreements were required to include an article. The visual analog score (VAS) was uniformly reported by the included studies to measure the procedural pain intensity for urethral catheterization, and were extracted as mean difference (MD) and 95% confidence interval (CI). Effect estimates were pooled using the inverse variance method with appropriate meta-regression model according to inter-study variability. Chi2 test and I2 statistics were used to assess heterogeneity and variability, respectively. Subgroup analysis was made for sexes. Protocol registration (PROSPERO CRD42016048660).

Results: A total of 104 publications were identified, of which 97 were excluded for not meeting the inclusion criteria. Five hundred-six patients (TAG [265 (52.37%)] and PL [241 (47.63%)]) from 7 studies with good methodological qualities were included for the meta-analysis. The overall MD comparing treatment groups was estimated to be -18.35 (95% CI -25.96, -9.74), indicating a statistically significant difference in favor of TAG. Further subgroup analysis among male patients [TAG (n=89) vs. PL (n=66)] showed a MD of -29.48 (95% CI -35.21, -23.74); while female patients [TAG (n=176) vs. PL (n=175)] showed a MD of -10.36 (95% CI -15.44, -5.27).

Conclusion: The moderate quality evidence from meta-analysis of 7 randomized controlled trials showed that topical anesthetic gel reduces urethral catheterization pain intensity in adults of both sexes.

RF-01.04

Evaluating the Validity of Laparoscopic and Flexible Ureteroscopy Tasks Using Inanimate Simulation Training Models

Lu J, Tiong H

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Introduction and Objective: Simulation based training is being increasingly used as a tool to help trainees mount the learning curve for new surgical skills. In light of restricted training hours and concerns of patient safety, there is a need for the development and use of simulation models to train residents.

Materials and Methods: Seventy-six urology trainees from various Asian countries were assessed on their laparoscopic and flexible ureteroscopy skills using inanimate simulation models. The laparoscopic peg transfer task was chosen from the validated Fundamentals of Laparoscopic Surgery (FLS) program. An endourological skills-training model was used to assess the trainees' skill with a flexible ureteroscope in complete inspection of calyces and retrieval of stones using a nitinol basket. Demographic information of the trainees' experience (no experience, 1 – 10 or >10 procedures) in laparoscopy, rigid ureteroscopy and flexible ureteroscopy were self-reported. Kruskal-Wallis test was used for comparisons between the demographic skill groups.

Results: Time required to complete the FLS task decreased with increasing laparoscopic experience (220 vs 197 vs 139 seconds, p=0.008) confirming the construct validity of the task. Using the endourological trainer, total time required for inspection of calyces and retrieval of stones reduced with increasing trainee experience with flexible ureteroscopy (389 vs 306 vs 230 seconds, p=0.003) but not with rigid ureteroscopy experience (370 vs 389 vs 314 seconds, p=0.1432). Age, year of training or years after graduation did not correlate with performance in both tasks.

Conclusion: The use of flexible ureteroscopy tasks in the endourological simulation training model demonstrated good initial construct validity similar

to a well-established laparoscopic model. It can be a useful tool for training novices in flexible ureteroscopy.

RF-01.05

Efficacy of Antibiotic Prophilaxis and Cleaning/Desinfection Devices in Flexible Cystoscopy to Prevent Positive Urinary Culture after Procedure

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Introduction and Objectives: To evaluate the efficacy of antibiotic prophylaxis as well as the cleaning/disinfection procedure to prevent urinary tract infection in patients who undergo flexible cystoscopy at office.

Materials and Methods: A prospective, randomized, aleatory study was performed between June 2015 and May 2016 in every patient who underwent flexible cystoscope at urology office. Patients with temporally or permanent urinary stents were excluded from the study as well as procedures that involves bladder biopsies. A total of 251 patients were recruiting. Urinary culture was collected in all of the patients before and after procedure. Patients were aleatoryzaded in two groups: Antibiotic prophylaxis Vs nothing. Antibiotic prophylaxis consists in 4 doses of norfloxacin (400mg) twice a day during two days. Type of cleaning/disinfection includes: manual adasport, manual oxide, washing machine. Demographics characteristics such as gender and age were also collected. Relation between antibiotic prophylaxis, type of cleaning/disinfection procedure, demographic characteristics and positive urinary culture after procedure were analysed. Measures to avoid BIAS: Randomization, aleatorization.

Results: Urinary culture before cystoscope was: Negative in 231 patients (92.4%) and positive in 19 (7.6%); and not valuable in 1. After aleatorization, 129 patients were included in Group 1 (no antibiotic treatment) and 117 in Group 2 (antibiotic prophylaxis), the rest 6 patients were autoexcluded. After procedure culture was negative in 224 patients (91.1%) and positive in 22 (8.9%). There were no statistical significances between urine culture results pre and post cistoscopy and demographics characteristics. Furthermore, no statistical differences were seen between urine culture post cystoscopy and type of cleaning cystoscope procedure (p=0.7), or between urine culture and type of cleaning with or without antibiotic profilaxis (p=0.5, p=0.9).

Conclusions: None of the analysed variables influence on the positivity of the urine culture after cystoscope. Routine antibiotic prophylaxis should not be further recommended.

RF-01.05, Figure 1. Urine Culture Results by Groups

GROUP 1	Urinary Culture pre-cystoscopy	Urinary culture post cystoscopy
POSITIVE	9	14
NEGATIVE	124	115

RF-01.05, Figure 2. Urine Culture Post Cystoscopy and Type of Cystoscopy Cleaning Method

GROUP 2	Urinary Culture pre-cystoscopy	Urinary culture post cystoscopy
POSITIVE	10	8
NEGATIVE	107	109

RF-01.06

Menstrual Cycle as a Risk Factor of Adverse Course of Acute Uncomplicated Pyelonephritis in Reproductive Age Women

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Introduction and Objective: The objective of the study was to study the role of menstrual cycle (MC) as a risk factor for adverse course of acute uncomplicated pyelonephritis (AUP) in reproductive age women.

Materials and Methods: Between 2011 and 2013 examined and treated 131 reproductive age women with AUP. In 93 women (group I) acute uncomplicated pyelonephritis occurred in the period from 20th to 5th day of the MC. In 38 women (group II) AUP occurred in the period from the 6th to the 19th day. Calculated regulatory intense index (RII) (on meth. Holyachenko O.M., Serdyuk A.M., Parish A.A., 1997), a key element of which were results of mathematical analysis of the most important factors and calculated the minimum (<5, 26 units) and maximum (> 8.97 units) probability of adverse motion AUP, the gap between what is classified attention.

Results: RII > 8,97 units recorded in 94.6 ± 2.4% patients of group I and against 18.4 ± 14.6% in patients of group II (p <0.001). RII from 5.26 to 8.97 units recorded in 81.6 ± 7.0% in patients of group II to 5.4 ± 10.1% in patients of group I (p <0.001) (table 1).

Conclusion: These results suggest that the maximum risk factor for adverse course of AUP in reproductive age women at onset of the disease occurs in the period from 20th to 5th day of the MC, indicating a need for in-patient treatment. The development of the AUP from the 6th to the 19th day of the MC reduces the risk of unfavorable course of the disease, the treatment of which can be performed on an outpatient basis under dynamic control urologist or general practitioner / family. These data substantiate indications for hospitalization and to re-evaluate prevention principles AUP in reproductive age women.

RF-01.07

Analysis of Systemic and Local Factors in the Outcome of Patients with Emphysematous Pyelonephritis

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Introduction and Objective: Emphysematous pyelonephritis (EPN) is a type of necrotizing infection characterized by accumulation of gas in the renal parenchyma and within the surrounding tissues. There is a paradigm shift towards conservative management and minimal invasive techniques. Various systemic factors like blood parameters, hemodynamic stability, and local factors like obstructive uropathy and CT grade of EPN have a major role in predicting the outcome. To analyze the local factors like obstructive uropathy, CT grade of EPN and systemic factors like hyponatremia, hypoalbuminemia, thrombocytopenia, hemodynamic stability in predicting the morbidity and mortality.

Materials and Methods: Seventy-one patients with EPN managed from August 2011 to January 2016 were analyzed. Data on demographic profile, clinical presentation, systemic factors, local factors, management and outcome of patients were recorded. The systemic factors included were serum albumin, sodium, platelet count total leukocyte count, random blood sugars, hemodynamic status, need for respiratory support and duration of hospital stay. Local factors like obstructive uropathy and the extent of gas (Huang and Tseng classification) in the kidney were evaluated by Computed Tomography. The patients were divided in to two groups: Group 1, Patients managed conservatively; Group 2, Patients with intervention.

Results: The mean age of the patients in our study was 56.5 years and the Male to Female ratio was 1:6. The urine culture was positive in 39 patients, with E. coli being the most common organism (25 patients). In our study patients with hemodynamic instability, thrombocytopenia, hypoalbuminemia, hyponatremia at presentation were associated with increased morbidity in terms of increased duration of hospital stay and the need for ventilation. However, no significant difference in age, male/female ratio, poor glycemic status, renal failure, leukocytosis, among the two groups. Local factors: Associated obstructive uropathy (n=12) in patients with EPN resulted in need for intervention and the need for increased hospital stay. However, CT grade did not correlate with the disease outcome. Four mortalities (8.8%) were noted in the study group.

RF-01.06, Table 1.

RII	MC (days)						p - value
	group I			group II			
	abs. n	%	±SE	abs. n	%	±SE	
RII>8.97	88	94.6	2.4	7	18.4	14.6	p<0.001
RII>5.26	5	5.4	10.1	31	81.6	7.0	p<0.001
Total (n=70)	93	100		38	100	5.5	p<0.001

Conclusion: Most patients with EPN can be successfully treated conservatively or with a minimally invasive approach. The presence of deranged systemic and local factors is associated with increased morbidity and mortality. Hence treatment of EPN requires comprehensive approach by considering both systemic and local factors.

RF-01.08

Minimally Invasive Approach for Nephrectomy in Adult Polycystic Kidney Disease: the Asian Experience

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Introduction and Objective: To evaluate the outcomes of laparoscopic nephrectomy for APKD in an Asian Population at a single institution.

Materials and Methods: We retrospectively reviewed all APKD patients who underwent nephrectomy from November 2002 to December 2016 at our institution. Indications and baseline clinicopathological characteristics were compared between open and laparoscopic approaches. Peri and post-operative outcomes such as hospital stay, blood transfusion and complication rates were analysed. A normality check was performed for all collected variables. Univariate analyses for categorical variables were carried out using Chi-square test and analysis for continuous variables were carried out using Mann-Whitney U Test.

Results: Thirty-five consecutive patients with APKD underwent nephrectomy of which 33 had complete records for analysis. 20 (60.6%) patients were males and 13 (39.4%) were females. Majority were Chinese (78.8%) and mean (± SD) age was 51.21 (± 9.50) years. All patients were ESRF prior to surgery except for 1 patient with stage 3 CKD prior to open nephrectomy. Sixteen (48.5%) patients underwent open, 15 (45.5%) laparoscopic and 2 (6.1%) had laparoscopic converted to open nephrectomy. A transperitoneal approach was performed in 26 (78.8%) patients. Indications for nephrectomy included: hemorrhagic cyst in 18 (54.5%) patients, suspected malignancy in 13 (39.4%) patients and infected renal cyst in 2 (6.1%) patients. Indications did not differ significantly between the 2 groups (open versus laparoscopic). Thirteen (39.4%) patients had bilateral nephrectomy performed in the same setting. All were performed transperitoneally, with 8 (61.5%) done via open and 5 (38.5%) laparoscopically. Maximum kidney length (MKL) was measured on Computed Tomography scan performed within 6 months pre-nephrectomy in 24 (72.7%) of patients. Median MKL in the open group was 16.48 (7.43) cm versus 13.80 (8.79) cm in the laparoscopic group. Multivariate analysis using logistic regression for above baseline parameters for laparoscopic versus open nephrectomy groups were performed and not found to be significantly different. Median (IQR) operative time in open was 181.00 (86.75) minutes compared to 176.00 (194.00) minutes in laparoscopic nephrectomy. Post-operative hospitalisation stay in open was 6.00 (5.25) days compared to 6.00 (3.00) days in laparoscopic nephrectomy. Six (33.3%) patients had post-operative complications in the open versus 4 (26.7%) patients in the laparoscopic group, all of which are minor (Clavien I-II) except for a re-laparotomy for wound dehiscence (Clavien III) in the open group. Seven (21.2%) patients required intraoperative blood transfusion of which 6 were in the open group. Intraoperative blood transfusion was associated with the open nephrectomy approach (p=0.046).

Conclusion: Laparoscopic nephrectomy for APKD patients is a safe and effective alternative to open nephrectomy regardless of MKL with comparable outcomes and the associated benefits of minimally invasive surgery.

RF-01.09

A Novel Prototype 3/5 Laparoscopic Needle Holder: A Validation Study with Conventional Laparoscopic Needle Holder

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Introduction and Objective: To validate a new prototype 3/5 mm laparoscopic needle holder.

Materials and Methods: The 'Prototype 3/5 mm' needle holder comprises of a 3mm tip housing the jaws of the needle holder which is welded with rest of the shaft of 5 mm diameter. Fifteen expert laparoscopic surgeons and twenty-four novice surgeons were given a set of five fixed tasks to be performed on laparoscopic box trainer. Prototype 3/5 mm needle holder was compared with conventional 5 mm needle holder. The first task was to grasp the needle and position it in an angle deemed ideal for suturing. The second task was to pass suture through two fixed points and make a single square knot. Task 3 was to perform two forward throws over the needle holder. Task 4 was to perform two backward throws over the needle holder. Task 5 was to perform two throws using the Maryland forceps. Individual time needed to complete each task

RF-01.09, Table 1.

TASK ANALYSIS

Task	Expert Group			Novice Group		
	Prototype 3/5 Needle Holder	Conventional Needle Holder	P value	Prototype 3/5 Needle Holder	Conventional Needle Holder	P value
1	9 ± 3.85	14.86 ± 8.78	0.028	17.23 ± 8.3	23.75 ± 12.44	0.039
2	86.66 ± 18.62	121.33 ± 32.83	0.001	117.08 ± 34.27	159.87 ± 41.33	<0.001
3	6.8 ± 1.47	9 ± 1.88	0.001	13.37 ± 3.88	18.62 ± 5.13	<0.001
4	7.53 ± 1.4	9.53 ± 1.76	0.002	13.78 ± 3.03	20.87 ± 8.95	0.001
5	6.06 ± 0.96	6.86 ± 1.35	0.074	17.20 ± 8.23	20.62 ± 12.27	0.26

SUBJECTIVE QUESTIONNAIRE ANALYSIS

	Items	P Value
Ease of Handling	Item 1 (Instrument weight and hand fatigue)	<0.001
	Item 2 (Ease of handling)	<0.001
	Item 3 (Ease of gripping the needle)	<0.001
	Item 4 (Ease of unlocking the needle holder)	<0.001
Ease of suturing	Item 5 (Ease of visualization of knot while throwing multiple knots)	<0.001
	Item 6 (Ease of visualization of the tissue of interest while suturing)	<0.001
	Item 7 (Ease of sliding the knot over the jaw without entanglement in the screw)	<0.001
	Item 8 (Ease of making a C Loop during knotting)	<0.001
	Item 9 (Ease of making a reverse C Loop during knotting)	<0.001
	Item 10 (Ease of throwing a double loop while knotting)	<0.001

was recorded. Each surgeon performed all the tasks using both needle holders one after the other. Each participant was given a 5- point Likert's scale based questionnaire for rating each needle holder.

Results: In both, expert group and novice group, the mean time (in seconds) to complete all five tasks were shorter with prototype 3/5 needle holder which was statistically significant in 4 out of 5 tasks (Table). On subjective scale too the prototype 3/5 mm needle holder fared better than conventional needle holder in terms of handling and suturing in both the groups (Table).

Conclusion: The expert laparoscopic surgeons as well as the novice laparoscopic surgeons performed each step of laparoscopic suturing faster and with more ease while using the prototype 3/5 mm laparoscopic needle holder.

RF-02.01

Neoadjuvant Sunitinib Treatment Prior to Planned Nephrectomy in Patients with Advanced Renal Cell Carcinoma: A Meta-analysis and Systemic Review

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Introduction and Objective: We conducted a meta-analysis to assess the efficacy and safeness of neoadjuvant sunitinib treatment in patients with advanced renal cell carcinoma.

Materials and Methods: A comprehensive search for articles of PUBMED, MEDLINE and EMBASE databases and bibliographies of retrieved articles published up to March 1, 2017 was conducted. Meta-analysis was performed using STATA 14.0.

Results: We included 10 studies in the meta-analysis (5 retrospective studies and 5 prospective studies), and found the proportion of primary tumors which decreased in size was 69% (95% CI: 57% - 82%) overall with 11% (95% CI: 8% - 15%) of ones reached partial response according to RECIST criteria. Nephrectomy was finally performed in 46% (95% CI: 25% - 66%) of patients receiving neoadjuvant sunitinib treatment overall. The pooled overall surgical complication rate was 29.6% (95% CI: 22.3% - 36.9%).

Conclusion: Our meta-analysis showed that neoadjuvant sunitinib treatment was effective in downsizing of both primary and metastatic tumors, and in converting an otherwise unresectable tumor to a surgically feasible resection. The overall surgical complication rate was consistent with those without neoadjuvant sunitinib treatment.

RF-02.02

Functional Outcomes after Conservative Surgery in Patients with Ureteral Tumors

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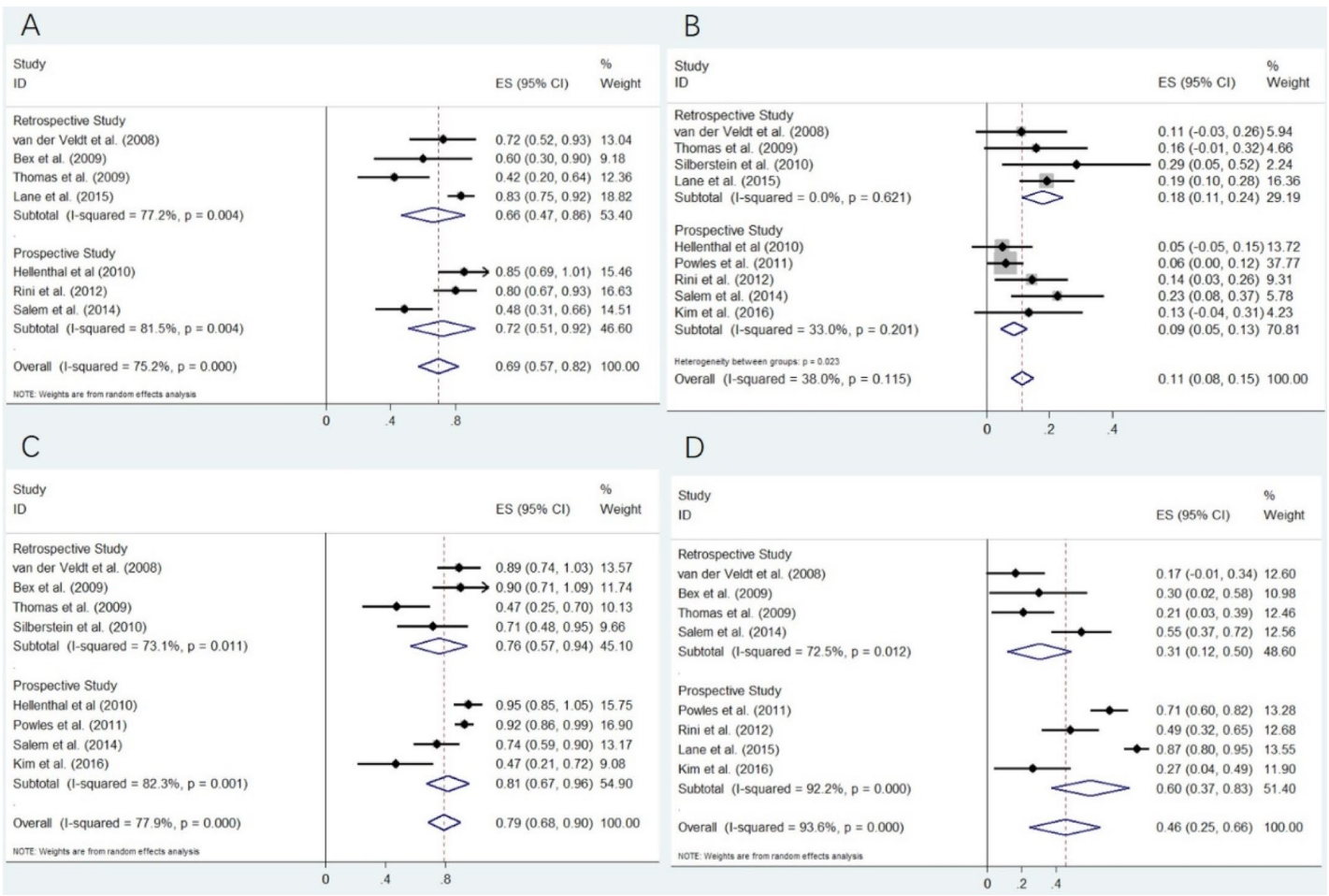
Introduction and Objective: Conservative surgery in patients with ureteral tumors can be performed only in highly selective patients, although there is no data about functional outcomes of such surgery. The aim of our study was to evaluate long term functional outcomes of conservative surgery in patients with ureteral cancer.

Materials and Methods: Retrospective analysis of 23 patients with ureteral tumors and preserved unilateral kidney function who underwent conservative surgery in our department.

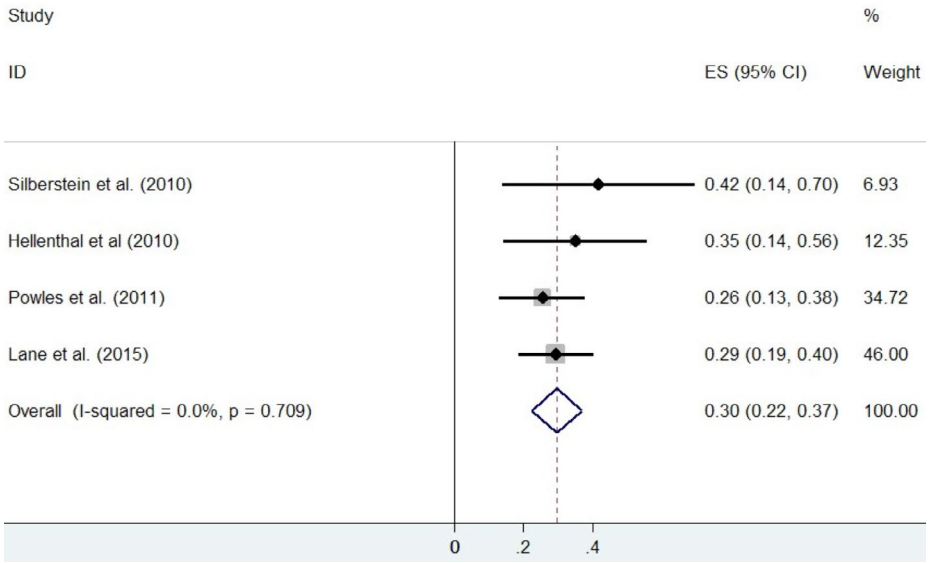
Results: Mean observation period was 60.2 ± 21.3 months. Mean age - 67 ± 6.9 years. According to dynamic renal scintigraphy affected kidney function prior to surgery was 20.3 ± 9.2 ml/min, serum creatinine level - 1.28 ± 0.42 mg\dl. All patients underwent conservative surgery with upper urinary tract reconstruction that included: ureteroneocystostomy with psoas hitch (48%), modified ureteroureterostomy (13%), in-

RF-02.01, Table 1.



Forest plot of efficacy of neoadjuvant sunitinib treatment in RCC. A: Forest plot of primary tumors which decreased in size; B: Forest plot of primary tumors which reached partial response; C: Forest plot of primary tumors which reached stable disease; D: Forest plot of nephrectomy which were finally performed.

RF-02.01, Table 2.



Forest plot of overall surgical complication rate.

testinal plasty of the ureter (26%), pyeloplasty (13%). According to dynamic renal scintigraphy affected kidney function 1 year after surgery was 26.2 ± 9.8 ml\min (p = 0.068), serum creatinine level - 1.16 ± 0.28 mg\dl (p = 0.043). One patient developed ureteral stricture after ureteroureterostomy with terminal hydronephrosis 9 months after surgery which required nephroureterectomy. There were no patients with local recurrence. Bladder relapse was diagnosed in 4 (17.3%) patients, progression to metastatic disease in 2 (8.6%) cases.

Conclusion: Conservative surgery provides good functional outcomes in selected patients with ureteral tumors. Preserved kidney function in this patient can affect overall survival and possibility to conduct chemotherapy.

RF-02.03

Endoscopic Transvesical Adenomectomy of the Prostate (ETAP): A New Minimal Invasive Treatment for Large BPH—A Description of the Technique and the Results of the First 40 Patients

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Introduction and Objectives: Large volume benign prostate hypertrophy (BPH), defined by the European Association of Urology (EAU) as >80 gram can be treated by a variety of ways. The golden standard in most centers is still the open adenomectomy according to Hryntschak/Freyer or Millin, a treatment with significant morbidity. The alternative is the Holium Laser enucleation (HoLEP), an effective, but rather expensive treatment. We present a new technique, the endoscopic transvesical adenomectomy of the prostate (ETAP). The presumed advantages are little blood loss, easiness to perform and low cost, with the same or better functional outcomes as the techniques described above. In this study, we present the new technique and the results in the first 40 patients.

RF-02.03, Table 1. Pre-Operative Characteristics

	Mean	Median
Age (years)	71 ±7.1	71
BMI	26.9 ±3.5	26.5
Prostate volume in TRUS (gr)	117 ±32.3	105
PSA (ug/l)	8.0 ±6.2	5.7
IPSS	20.6 ±6.1	21
Qmax (ml/s)	7.9 ±2.8	7.9
PVR (ml)	307 ±352.5	188

RF-02.03, Table 2. Peroperative Results

	Mean	Median
Blood loss (ml)	184.1 ±153.1	100
Operation time (min)	102 ±31.0	95

RF-02.03, Table 3. Postoperative Results

	Mean	Median
Hospital stay (days)	5.2 ±4.8	4
Days with catheter	9.4 ±3.9	9
Prostate volume (gr)	85.2 ±30.1	82
IPSS	7.8 ±3.4	7
Qmax (ml/s)	19.4 ±10.5	16.2
PVR (ml)	47.3 ±49.2	26

Materials and Methods: From March 2014 till November 2016, 40 patients underwent ETAP. All patients were suffering from obstructive lower urinary tract symptoms due to BPH larger than 80cc (measured on transrectal ultrasound). In this operation, we use a transvesical approach. We use three laparoscopic instruments: a bipolar grasper, a harmonic scalpel and a suction device. The adenoma is transected completely and then removed in an endobag through the cystotomy incision. A prospective data-collection was done with regard to pre-, per- and post-operative data. Pre-operative data included: ultrasound estimated prostate volume, PSA, Qmax, and post voidal residue (PVR). Peroperative data included: estimated blood loss, operating time, complications and transfusion rate. Postoperative data included: hospitalization time, catheterization time, resected specimen weight, Qmax, PVR. The International Prostate Symptom Score (IPSS) was assessed preoperatively and >6 months after surgery. In table 1 the pre-operative characteristics are shown.

Results: Average operating time was 102 minutes and estimated blood loss 184 ml. In three cases, an endoscopic coagulation and a blood transfusion were necessary. No Clavien grade V occurred. Postoperatively patients got a bladder catheter for a mean duration of 9.4 days and a mean hospital stay of 5.2 days. The enucleated tissue showed on pathology a mean weight of 85.2 gram. Postoperative IPSS scores improved by average 12.8 points (pre-operative mean IPSS score was 20.6). The Qmax showed a mean improvement from 7.9 ml/sec pre-operatively to 19.4ml/sec post-operatively. In table 2 and 3 the per- and postoperative results are shown.

Conclusions: In this study, we show that the ETAP is a feasible, safe and truly minimal invasive procedure. The functional outcomes are promising. We have to take into account that our learning-curve is involved in the development of this new technique.

RF-02.04

Chemoprophylaxis during Transrectal Prostate Needle Biopsy: Interim Analysis of Randomized Clinical Trial (Clinicaltrial.Gov ID: NCT02423759)

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Introduction and Objective: Post Transrectal biopsy infectious complications (PTBICs) are increasing due to rising fluoroquinolone resistance (FQ-R). We evaluate whether changing chemoprophylaxis from fluoroquinolones alone to fluoroquinolones plus gentamicin or rectal swab culture-based chemoprophylaxis would influence infectious complications in men undergoing transrectal ultrasound-guided prostate biopsy (TRUSPB).

Materials and Methods: Patients presented for prostate biopsy will be randomized to receive standard ciprofloxacin 500 mg B.I.D for 3 days (group A), augmented prophylaxis using ciprofloxacin and single preprocedure 160mg gentamycin IM (group B) and rectal swab culture based prophylaxis (group C). Primary end point is occurrence of postprocedure sepsis ≥ 2 of SIRS (systemic inflammatory response syndrome criteria). Inflammatory markers are used for postprocedure screening; CRP (C reactive protein),

RF-02.04, Table 1. Data from Patients with Obstructive and Non-Obstructive Azoospermia

	2012-2015					2012-2014	
	No. Cycles	Mean male age	Mean female age	Mean eggs retrieved	Mean eggs fertilized	Pregnancy rate, % (pregnancies/ cycles)	Live birth rate % (live births/cycles)
OA (Obstructive Azoospermia)	6	38.20	34.75	11.00 (3-20)	8.25 (2-13)	75,0% (3/4)	50,0% (2/4)
NOA (Non-obstructive azoospermia)	30	34.45	31.95	9.58 (3-31)	6.53 (2-19)	29,4% (5/17)	29,4% (5/17)

Cumulative pregnancy and live birth rates considering the total number of cycles performed.

ESR (Erythrocyte sedimentation rate) and TLC (total leucocyte count). Secondary endpoint is occurrence of FQ-R. Patients were assessed 2 weeks prior to biopsy, at time of biopsy and 2 weeks after.

Results: Since April 2015, 258 patients were randomized 89, 94 and 80 patients in groups A, B and C respectively. Prebiopsy urine culture with significant were treated before biopsy. Postprocedure fever occurred in 19 (21.3%), 9 (9.5%) and 8 (10%) in groups A, B and C respectively (P 0.03). Sepsis was reported in 5 (5.6%), 5 (5.3%) and 4 (5%) in groups A, B and C respectively (P 0.9) and 2 (2.2%) patients in group A required hospitalization. Urine culture 2 weeks after biopsy showed significant growth in 23 (25.8%), 5 (5.3%) and 11 (13.7%) in groups A, B and C respectively (P 0.002). Among cultures of rectal swab, significant bacterial growth was noted in 62/80 (77.5%), FQ-R was reported in 55/62 (88.2%).

Conclusion: With increasing FQ-R, ciprofloxacin alone is not an optimal prophylaxis. Augmented prophylaxis is an effective and practical approach. Targeted prophylaxis is reserved for cases with contraindication to gentamycin.

RF-02.05

The Diagnostic Outcomes of Men with a Negative Mpmri for the Diagnosis of Prostate Cancer, in Low-Risk Biopsy Naive Men

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Introduction and Objectives: The routine use of pre-biopsy multiparametric MRI (mpMRI) for the early diagnosis of prostate cancer (CaP) is controversial. A consensus on the optimal management algorithm of a low risk man with a negative mpMRI is unclear. Current guidelines suggest prostate specific antigen (PSA), digital rectal examination (DRE) and shared decision making should be used to determine if a biopsy should be done. mpMRI has the potential to be used as an additional screening tool to select some men to avoid biopsy, potentially lowering the associated harms and over diagnosis. This study evaluated the outcomes of low risk, mpMRI negative men at our institution.

Materials and Methods: Between September 2015 and August 2016 206 men with a PSA <10 ug/L underwent mpMRI for suspected CaP. Twenty-two men were excluded for: previous TURP, previous MRI, prior biopsy or known CaP. One hundred and eighty-four men were evaluated for PSA, MRI findings, Prostate Imaging Reporting and Data System (PI-RADS) score, transrectal ultrasound guided (TRUS) biopsy findings and Gleason scores.

Results: Fifty-seven out of one hundred and eighty-four (31%) of mpMRIs done were thought to have no evidence of CaP (PI-RADS<3). 24/57(42%) of men with a negative MRI went on to have a TRUS biopsy. Of those biopsied, 9/24 (37.5%) were positive and 15/24 (62.5%) were negative for CaP. 6/9 (66.7%) positive biopsies were Gleason 3+3 (clinically insignificant CaP). 3/24 (12.5%) of men with a negative MRI had clinically significant CaP, as high as Gleason 4+5.

Conclusion: Less than half of the men at low risk of prostate cancer (PSA <10 ug/L) that had a negative MRI went on to have a biopsy done. Of those biopsied, 12.5% of men with a negative mpMRI had clinically significant CaP. These results indicate that until the performance of mpMRI is improved and definitive surveillance protocols are devised TRUS biopsy continues to play a role in men with negative mpMRIs.

RF-02.06

Quality of Life after Surgery for Localized Prostate Cancer

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Introduction and Objective: This study is a retrospective review designed to assess the impact of treatment type on quality of life (QOL) in a large database of men who underwent surgery for prostate cancer.

Materials and Methods: 373 patients underwent robot-assisted laparoscopic radical prostatectomy (RALP), brachytherapy, or cryotherapy for prostate cancer at a single institution from 2010-2014. Five quality of life domains (urinary incontinence, urinary irritative/obstructive, bowel, sexual, and hormonal symptoms) were assessed preoperatively and again at 1-60 months after treatment using the Expanded Prostate Cancer Index Composite (EPIC-26) questionnaire. Outcomes were compared across treatment modalities using univariate and multivariate analysis.

Results: All quality of life domains were affected by prostate cancer treatment. The mean follow-up time after surgery was 41 months. Urinary incontinence worsened significantly in the RALP and brachytherapy groups ($p < 0.001$). The cryotherapy group achieved a return to baseline urinary continence at 6 months and had significantly better continence QOL than the brachytherapy group at 30 months ($p = 0.021$). Brachytherapy patients had significantly worse irritative/obstructive voiding symptoms compared to RALP patients at 30 months ($p < 0.001$), and also experienced a 55% slower rate of return to baseline. Bowel function was significantly worse in brachytherapy patients compared to RALP patients at 30 months ($p = 0.037$). The cryotherapy and brachytherapy groups had a 36% slower recovery of bowel function. Cryotherapy was associated with the worse sexual function than brachytherapy at 30 months ($p = 0.012$), although all three groups were affected. Minimal impact on hormonal function was observed long-term.

Conclusion: Due to the high survival of patients who receive treatment for prostate cancer, quality of life is a major concern when choosing therapy. Each prostate cancer treatment studied above has a unique recovery profile. Long term, RALP is associated with the least urinary irritative and obstructive symptoms, whereas cryotherapy is associated with the least impact on urinary incontinence but the greatest impact on sexual function. Brachytherapy was correlated with the greatest decline in bowel function. All three modalities have minimal effect on hormonal function.

RF-02.07

The Post-Operative Decline in Factor XIII is a Predictor of Vesicourethral Anastomotic Leakage and Lymphorrhea after Robot-Assisted Radical Prostatectomy.

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Introduction and Objective: Factor XIII (F13) plays an important role in blood coagulation by stabilizing fibrin and has recently been recognized to accelerate the wound healing process. However, little study has been done to explore the association between F13 levels and postoperative complications after surgery, especially in terms of urological operation. We aimed to determine if the F13 levels during perioperative periods were associated with the postoperative complications after prostatectomy.

Materials and Methods: A prospective study has been conducted for patients with prostate cancer at our institution. Preoperative and postoperative (1st, 3rd, 5th, and 7th postoperative days) F13 and other coagulation factors, such as PT and aPTT, levels were examined in 119 patients with prostate cancer who underwent robot-assisted radical prostatectomy (RARP). Anastomotic leakage was routinely checked with instillation of 150ml normal saline during the operation, and if leakage was detected, additional suturing was performed to assure water-tightness. At post- operative day7, anastomotic leakage was investigated by cystography before indwelling catheter was removed. We investigated the association of F13 levels with clinical background factors and the postoperative complications after RARP.

Results: The average age of the patients who underwent prostatectomy was 67.4 years. Major postoperative complications included anastomotic leakage (10.08%), and lymphorrhea (7.56%) and postoperative bleeding (9.24%). During the operation, all the patients underwent leakage check-up by instilling 150ml normal saline after anastomosis maneuver and if there is leakage, additional suturing of urethra and bladder is performed. The preoperative F13 ranged from 64 to 143% (average 92%). The F13 levels significantly decreased after prostatectomy and it did not recover until the 7th postoperative day. (POD0:71%, POD1:69%, POD3:65%, POD7:63%, POD30:87%). Univariate analysis showed initial PSA, BMI, PT(-POD7), F13 (pre-operation, POD0, POD3) was associated with lymphorrhea, but multivariate analysis showed F13 levels at POD3 was only correlated with total volume of discharge from the drain (p=0.012) . In terms of anastomotic leakage at POD7, F13 at POD3 also showed significant association (p=0.035).

Conclusion: This study revealed that perioperative decrease of Factor XIII may be a predictor of lymphorrhea and anastomotic leakage after RARP.

RF-02.08

Quality of Life and Late Sexual Morbidity in Patients Submitted to Prostatic Brachytherapy for Localized Prostate Cancer

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Introduction and Objective: Brachytherapy is a valid treatment option for localized prostate cancer, frequently associated with low morbidity and good health related quality of life (HR-QoL) levels. There are few randomized studies relating late sexual morbidity and HR-QoL in patients submitted to prostatic brachytherapy. The aims of this study are: assess and characterize late sexual morbidity and HR-QoL in patients submitted to prostatic brachytherapy with 125I; assess the impact of pre-treatment factors in the development of sexual morbidity; determine the impact of sexual satisfaction in HR-QoL and patients 'global satisfaction.

Materials and Methods: All patients submitted to prostatic brachytherapy in a single urology department between October 2003 and October 2016, were asked to answer the EPIC, IIEF and BSFI questionnaires. The results were treated in function of patient age and time since brachytherapy. Associations were tested according pre-treatment sexual function and patient's morbidities (diabetes mellitus, smoking habits and hypertension).

Results: From 536 patients, 27 died and 203 (37.9%) validly answered to the questionnaires. The median follow-up was 6.42 years (SD=2.6 years). There was a significant decline in all sexual domains with the exception of sexual desire. Erectile dysfunction was the main developed symptom, followed by ejaculatory dysfunction and orgasmic deterioration. 67.4% of patients suffer from some degree of sexual bother, but only 14.5% patients said it was a severe problem. 52.8% of patients were satisfied with their sexual performance. The development of sexual dysfunction has an important impact on global satisfaction. Pre-treatment erectile function, diabetes mellitus and patient age has a significant influence in the development of sexual dysfunction and impact in global sexual morbidity development.

Conclusion: Erectile dysfunction following prostate brachytherapy has an important impact in patients 'satisfaction and HR-QoL, but the majority of patients are able to have adequate erections for sexual activity. A significant correlation was found between pre-implant potency, patient age and diabetes mellitus, and the development of sexual morbidity; Patients satisfaction and HR-QoL after brachytherapy are high and it is a well-accepted treatment.

RF-02.09

Low Intensity Extracorporeal Shockwave Therapy: First Results from a Prospective Study on Erectile Dysfunction

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Introduction and Objective: Erectile dysfunction (ED) is a common problem in our society. Its' prevalence is higher amongst the elderly and patients with cardiovascular risk. Oral 5-phosphodiesterase inhibitors (5PDE-I) and intracavernous/intra-urethral alprostadil are the therapeutical options for these patients. Although the good results shown by these approaches, non-responders lack other effective options. In the last years, some innovative options appeared in order to face this problem, and some studies have shown good results with the use of low-intensity extracorporeal shockwave therapy (Li-ESWT) in the corpora cavernosa. This article presents the first results from a prospective study in our centre, with the aim to evaluate clinical efficacy of Li-ESWT.

Materials and Methods: Eighteen patients with vasculogenic or diabetogenic ED have been submitted to 4 sessions of Li-ESWT (3000 pulses/session, distributed in 6 points (4 in the penile shaft + 2 in the crura) once a week). Every patient has been re-evaluated 4 weeks after the last session. Pre- and post-procedure International Index of Erectile Function – Short Form (IIEF-SF) scores and Global Assessment Questionnaire (GAQ) answers were obtained.

Results: These patients were 61.1±7.2 years old, 55% with diabetes and 61% with hypertension; 38.9% were smokers. They scored an average 11.6±4.8 points in the IIEF-SF. Half of these patients were 5PDE-I non-responders, 22% had a medical contraindication for its use and 11% did not respond to alprostadil intracavernous injections. During treatment, 55% developed de novo spontaneous erections, and 44% referred a global improvement in their sexual capacities. After treatment, IIEF-SF scored 12.3±4.2 points (p=0.36), with just 16.7% answering positively to GAQ. No complications have been registered.

Conclusion: The present study failed to show a sustained improvement in erectile function of our patients after treatment with Li-ESWT. However, we found an improvement during the treatment. Larger studies to confirm Li-EWST efficacy shown by some groups are lacking. In the future, a different setting with the same technology (with changes in frequency or number of pulses) or a more refined selection of patients might improve the outcomes.

RF-03.01

Gender-Related Differences in Diagnosis, Treatment and Survival of Patients with T1 Urothelial Carcinoma of the Bladder

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Introduction and Objective: Previous studies based on the Swedish National Registry of Urinary Bladder Cancer (SNRUBC) have shown gender differences in the use of intravesical treatment. The aim of this investigation was to further describe possible differences between men and women with T1 urinary bladder cancer (UBC) regarding diagnosis, intravesical treatment, re-resection and survival.

Materials and Methods: All patients in Sweden with T1 UBC without metastatic disease reported to the SNRUBC from 1997 to 2014 were included in the study. Patients who had undergone radical cystectomy or radiotherapy were excluded. Differences between genders where studied by chi-squared test and regression analysis. Cancer-specific survival was studied with Kaplan-Meier method, log-rank test and cox analysis. The cohort was stratified into patients 74 years or younger and 75 years and older. Only primary treatment was considered as follow-up is not available. Information about death from bladder cancer was extracted from the National Cause of Death Registry.

Results: In all, 7668 patients with T1 UBC (77% male and 23% female) were included. Women were older at the time of diagnosis with a mean age of 76 (IQR 76-82) years compared to 74 (IQR 67-81) for men

(p<0.001). A larger proportion of men underwent multiple intravesical instillations as primary treatment, 38% vs 33% (p<0.001). The difference in treatment was consistent during time and found in both age groups, but not in all grades. Women with T1G3, but not T1G1-G2, underwent less treatment than men (p=0.001). Similar proportions of men and women underwent re-resection as primary treatment, 23% vs 21% (p=0.73). The cancer-specific survival in patients ≥75 years was inferior for women (76%) compared to men (80%; p=0.022), however equal between genders in patients 74 years or younger. When women 75 years and older underwent re-resection followed by multiple intravesical instillations the cancer-specific survival was comparable to the cancer-specific survival of men.

Conclusions: In this population-based study of patients with T1 UBC we found that women underwent less intravesical instillations. Female gender was associated with inferior cancer-specific survival in patients older than 75 years. However, when women underwent optimal treatment the cancer-specific survival was comparable between genders.

RF-03.02

Comparative Study of Success in B.M.G Urethroplasty for Tobacco Chewing and Non-Tobacco Chewing Patients

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Introduction and Objective: The success rates of BMG urethroplasty operations are claimed to be high (>90%) in various series. Success of BMG urethroplasty not only depends upon the recipient site characteristics but also depends upon the health of buccal mucosa. To assess the impact of oral betel cum tobacco quid (BT Quid) chewing over the success of single stage transperineal dorsal BMG urethroplasty in the treatment of long anterior urethral stricture.

Materials and Methods: This is a retrospective study carried out on 64 patients, operated in a period from January 2014 to Jan 2016, who underwent one stage transperineal dorsal BMG urethroplasty. The patients were grouped into two groups Betel cum Tobacco (BT) Quid users and BT Quid non-users. The type of tobacco consumed and duration of consumption were noted. Successful outcome was defined as normal voiding with no need of any interventional during the follow up period.

Results: A total of 64 patients were studied with mean age of 40 years and mean stricture length 5.3 cm. the mean follow up was 18 months. Out of total 64 patients 24 were chewing BT Quid and 40 patients were not. Length of stricture was almost similar in BT quid chewers and non-chewers. Mean age is also more or less same. Out of these 17 patients (10 in BT quid chewers and 7 in non-users) developed stricture at anastomotic site, these patients required urethral dilatation or VIU at various stages of follow up and were considered as failures. Four failure patients even required re do open surgery. Success rate among tobacco chewers is 58.33% which is significantly lower than success rate among tobacco non-chewers (82.5%) (p value significant).

Conclusions: The health of oral mucosa is very important factor and patients who have good oral hygiene have a much better outcome in comparison to those who have poor oral health.

RF-03.03

The Positive Impact of Changing Urethral Stricture Management in Urethral Dilatation in Urological Outpatient Services

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Introduction and Objective: Urethral stricture remains complicated urological problem since ancient time and therapeutically challenging for the urologist. Urethral stricture is an acquired permanent narrowing of the urethra impeding the flow of urine during micturition. The aim of surgical reconstruction for urethral stricture is to provide an adequate caliber, compliant and stable urethra. The changing pattern of urethral stricture management with open urethral reconstructive surgery was started since 2012 in our center. The success rate of open urethral reconstructive surgery is defined as a stable and good flow rate also no postoperative calibration nor dilatation. To present our center`s experience in managing urethral stricture with open reconstructive surgery and the impact on urethral dilatation procedure in urological outpatient services.

Materials and Methods: This is a prospective study. Patients who had open reconstructive surgery and patients who had urethral dilatation in outpatient clinic from 2012 to 2016 at Hasan Sadikin General Hospital Bandung were included in the study. We study the characteristic of the patient who underwent urethral dilatation procedure in outpatient services during that period of time. We perform the comparison study between ratio of open reconstructive surgery and ratio of urethral dilatation from total of urethral stricture patients each year. The correlation between ratio of open reconstructive surgery and ratio of urethral dilatation was analyzed by Pearson analysis.

Results: The total of patient underwent open urethral reconstructive surgery technique was 320 patients, and total patient who underwent urethral dilatation was 174 during 5 years period. Mean for ratio of urethral dilatation was 0.30±0.18 and ratio of open reconstructive surgery was 0.59±0.16. There was significant correlation between increase of ratio of open reconstructive surgery and decrease of ratio of urethral dilatation (P 0.012). There was a strong negative correlation between ratio of open reconstructive surgery and ratio of urethral dilatation (R -0.955)

Conclusion: Open reconstructive surgery gives a positive impact in decreasing number of urethral dilatation procedure. There was significant correlation between increase of ratio of open reconstructive surgery as decrease of ratio of urethral dilatation procedure in outpatient services. Open reconstructive surgery is more effective rather than continuous urethral dilatation. DVIU/dilation combined with intermittent dilation may be used as a palliative maneuver for patients unwilling to open undergo urethral reconstruction or medically unfit for surgery.

RF-03.04

Post-Turp Urethral Strictures Can Be Managed Successfully with Urethroplasty

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Introduction and Objective: Urethral stricture disease is seen in 2-9% of patients after transurethral resection of the prostate (TURP) but data is limited as to treatment outcomes. Our purpose is to establish patterns of disease severity and treatment for post-TURP strictures.

Materials and Methods: A retrospective database was created for patients who underwent management of post-TURP strictures at 9 reconstructive urology centers. Data consisted of demographics, TURP method, location/length of urethral strictures, interventions prior to urethroplasty, surgical technique used for urethroplasty, and outcomes. Exclusion criteria included age <18 and follow-up period <1 year. Success is defined as no intervention within the observation period. A descriptive analysis was performed on a total of 130 patients.

Results: Mean age was 68 years (range 41–86). Seventy-seven percent of patients underwent monopolar TURP (n=100). Other TURP modalities include: 10% bipolar (n=13), 3% GreenLightTM laser (n=4), 3% holmium laser (n=4), 2% other lasers (n= 3) and 5% unknown modality (n=6). Urethral stricture locations were: 29% bulbar urethra (n=38), 17% membranous urethra (n=22), 11% penile urethra (n=15), 5% fossa navicularis urethra (n=6), and 38% long/panurethral (n=49). The average intraoperative length of strictures was 4.4cm (range 1-23cm). Average number of endoscopic interventions prior to urethroplasty is 3.6 (range 0-36). Urethroplasty techniques were: anastomotic (33%, n=43), dorsal graft (39%, n=51), ventral graft (15%, n=19), flap (6%, n=8), perineal urethrostomy (2%, n=3). Five percent of patients underwent advanced reconstructive techniques: double graft, augmented dorsal anastomotic, Duckett, or first stage Johanson (n=6). Overall success rate was 85% with average time-to-failure of 23 months (range 2-151 months). Success rate for patients who had prior endoscopic intervention (urethrotomy or dilation) was 83% versus those with no prior endoscopic intervention who had a success rate of 100%. Seventeen percent of patients reported complications including recurrent UTI, erectile dysfunction, urinary incontinence, and penile shortening.

Conclusion: Our study represents the first multi-institutional report on the severity and management of post-TURP urethral strictures. Our data shows that the majority of post-TURP strictures are successfully managed with urethroplasty, with 85% success. Better success rates are seen in patients with no prior endoscopic intervention, suggesting early urethroplasty or referral to a reconstructive urology center is warranted.

RF-03.05

Very Unusual Case of Retro Vesical Teratoma in Infant

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Introduction and Objective: Teratoma, arise from totipotent germ cells and made up of well differentiated parenchymal tissues that derived from all three germ cell layers. Teratomas are gonadal or extragonadal. Extragonadal teratomas are very rare. Among extragonadal teratoma retro vesical teratoma is very unusual. No case report is found in literature so far for retrovesical teratoma in infant.

Materials and Methods: A 4 months old infant presented with palpable lower abdominal mass noticed by parents. No significant birth and past history. On palpation firm, non-tender mobile well defined mass present in hypogastric region reaching up to umbilical region. Hemoglobin was 9.2 g/dL, Leucocyte count was 9,800, Serum creatinine 0.59 mg/dl. All other laboratory investigations were normal. Ultra sonography of abdomen revealed both kidney show moderate hydroureteronephrosis with collection at right lower pole of kidney. CT urography suggested, well-defined 52*52mm collection on lateral side of right kidney communicating with middle calyx on delayed film. A well-defined soft tissue lesion with fluid density, foci of fat and calcification of 70*40mm in pelvis causing anterior displacement of bladder, may be teratoma.

Results: On cystoscopy bladder was pushed anteriorly and bilateral ureteric orifice were normal. Bilateral double J stent was kept. On exploration, we found large 6*7 cm tense cystic mass, arising from retrovesical pouch in midline, pushing bladder anteriorly. We completely excised the mass and drained the collection. Drain kept and closure done in layers. Microscopy: specimen show all three germ cell derivatives with good differentiated suggestive of mature mixed extragonadal teratoma. Follow up: after two years of follow up patient is asymptomatic.

Conclusion: Although, teratoma is common in infancy but retrovesical teratoma is very unusual. Teratomas are mature (benign) or immature (bening or malignant). Clinical presentation depends on site of teratomas. Diagnosis is established by radiological investigations in forms of CT scan or MRI. Definitive diagnosis is based on basis of histopathology examination containing elements of all three-germ cell line. Surgical excision is the mainstay of treatment with good prognosis.

RF-03.06

Bladder Contractility Index in Posterior Urethral Valve: A New Marker for Early Prediction of Progression to Renal Failure

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Introduction and Objective: In spite of early valve fulguration nearly two third of the children may progress to chronic kidney (CKD) and bladder decompensation secondary to poor bladder contractility (under active detrusor) near puberty. In this study, we hypothesized that bladder contractility index (BCI) may be an early marker for future renal deterioration in patients of PUV. CKD III or estimated eGFR of ≤45 ml/min/1.73m2 has been reported to be associated with more adverse renal, cardiovascular and clinical outcome. The objective is to assess the correlation of bladder contractility index (BCI) with development of CKD III (eGFR of ≤45 ml/min/1.73m2;KDIGO classification) or more in PUV.

Materials and Methods: A retrospective search of our hospital database identified 320 children with PUV who had undergone valve ablation between 2000 and 2010. Patients' clinical records were analyzed as on December 2015. Two hundred and seventy patients were included for the analysis. All patients had a baseline urodynamic study (UDS) done at 6 months after valve surgery and thereafter annually for 5 years. UDS parameters collected were, bladder contractility index (BCI=PdetQmax+5 Qmax), end filling pressure (EFP), compliance (ΔC), bladder outlet obstruction index (BOOI= Pdet Qmax – 2 Qmax) and bladder volume ejection (BVE=Voided volume/total capacity). Primary end point of the study was an eGFR of ≤45 ml/min/1.73m2 (CKD stage IIIA or more, KDIGO classification).

Results: Mean follow-up period was 12.5 years (range 1-15) and median age of patients at the time of evaluation was 5.8 yrs. At the end of the study, 21.8% (59/270) patients had progressed to CKD stage IIIA or more and lifetime risk for developing CKD stage was 45%. Cox regression analysis of risk factors predicting development of CKD stage IIIA was done. In the multivariate model, bladder contractility index (BCI) (HR, 0.8; p=0.004), end filling pressure (EFP) (HR, 2.1; p=0.010) and ΔC (p=0.020) were significantly associated with the event (i.e. an eGFR of <45 ml/min/1.73m2) whereas BOOI (p=0.053) and bladder BVE (p=0.267) were not.

Conclusion: Bladder contractility index and end filling pressure are the two important urodynamic indices which can predict early the long-term risk of development of CKD stage III in children with PUV.

RF-03.07

Safety and Efficacy of Supra-Costal Approach for PCNL in Pediatric Patients: Application of Clavien Classification System

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Introduction and Objective: The purpose of this study was to evaluate the success and morbidity of percutaneous nephrolithotomy (PCNL) performed through the 11th intercostal space and compare it with the subcostal approach.

Materials and Methods: Data of patients with renal calculi under 18 years of age were prospectively collected between January 2005 and December 2015. Patients were divided into two groups those done with supracostal (group 1) and subcostal access (group 2). Patient characteristics, stone location, stone burden, number and location of the access point, operative time, visual pain score, hospital stay, and complications according to the modified Clavien classification were compared between group 1 and group 2. On day 1 of the operation, all patients were investigated for complete blood count (CBC) and any fall in the hematocrit level. Postoperative chest X-ray was routinely done in all cases of supra-costal access.

Results: Between January 2010 and December 2015, 75 pediatric patients underwent PCNL of whom 55 matched the selection criteria. Of these, 25 and 30 had a supracostal and subcostal access respectively. Stone bulk (median 2.5±1.9 cm) and locations were comparable in both the group. The stone-free rate was 84.8% and 85.36% in groups 1 and 2 respectively after one session of PCNL. Change in hematocrit level (p=0.261), visual pain score/ need of analgesia (p=0.368), and hospital stay (p=0.231) were not statistically significant in two groups. A total of 27 (49%) complications were documented in the two groups according to modified Clavien classification. Overall complication rate was 28% in group 1 and 25% in group 2 (p value =0.799). Grade-I complications were recorded in 17 (30.1%), grade-II in 8 (14.5%) and grade IIIb in 2 (3.63%) patients. Grade-IIIb complications were recorded in group1 only; 1 in the form of nephropleural fistula which responded to repositioning of JJ stent and placement of a nephrostomy tube and another hydropneumothorax requiring intercostal tube drainage. There were no grade-IV or grade-V complications.

Conclusion: Supracostal PCNL in selected cases is effective and safe with acceptable complications. The modified Clavien system provides a standardized grading system for complications of PCNL in pediatric patients.

RF-03.08

Comparison of Guy's Stone Score and S.T.O.N.E Nephrolithometry in Predicting Stone Clearance after Percutaneous Nephrolithotomy (PNL)

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Introduction and Objectives: S.T.O.N.E nephrolithometry and Guy's score can be used for predicting stone free status, preoperative patient counselling and surgical planning before percutaneous nephrolithotomy (PNL). The objective is to determine the mean value of Guy's stone score and S.T.O.N.E nephrolithometry in predicting stone clearance after percutaneous nephrolithotomy (PNL).

Materials and Methods: We conducted a prospective study of patients undergoing single tract, prone posi-

tion PNL at our hospital. Only patients with unilateral procedure and radio-opaque stones were included. The Guy's Stone Score and S.T.O.N.E. Nephrolithometry score were calculated on non-contrast CT scan before procedure. Stone clearance was assessed with X-ray KUB within 2 weeks and complications were graded using modified Clavien grading system. Patients who were stone free were compared with those who had residual fragments. Chi-square/ Fischer exact test was used for comparison of categorical variables where appropriate. Student's t-test was used for comparing continuous variables. A p- value of ≤0.05 was taken as statistically significant.

Results: A total of 190 patients were included. Overall, 81.57% (155) patients were rendered stone free. Patients who were stone free had lower mean S.T.O.N.E score compared to those with residual stones, 8.43+/-2.32 vs 10.20 +/-2.09 (p = 0.02). Similarly, the mean Guy's grade was lower in patients who were stone free as compared to those with residual stones, 2.55 +/-1.03 vs 3.17 +/-0.85 (p = 0.01). A higher Guy's grade and S.T.O.N.E score were also associated with a longer operative time and length of stay (p = 0.01 and 0.03 respectively). The most common complication was bleeding requiring blood transfusion in 8 patients.

Conclusions: Both scores are useful predictors of stone clearance and can be used in preoperative patient counseling. However, Guys score is simple and readily usable in clinic settings due to its pictorial representation, while S.T.O.N.E score is cumbersome and time consuming.

RF-03.09

Percutaneous Nephrolithotomy of Staghorn Renal Stones in Pediatric Patients

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Introduction and Objective: It is estimated that 5-10% of the world population would suffer from renal stones during their lifetime, among them children account for only 2–3% of the cases. The incidence of pediatric renal stones is higher in certain developing countries such as Turkey, Iran and India. In the present study, we aimed to evaluate the safety and efficacy of the PCNL procedure in pediatric cases performed with adult instruments.

Materials and Methods: We retrospectively evaluated the efficacy and safety of eighty-two PCNL procedures performed in 82 pediatric patients, aged from 9 months to 15 years old, with staghorn calculi. All procedures were performed between September 2001 and December 2016 in Labbafinejad Hospital Tehran, Iran. The following were collected and analyzed: history of previous stone surgery, stone burden and stone location. Stone-free was defined as complete clearance of the stones or the presence of insignificant residual stones of <3 mm in diameter.

Results: The patients' mean age was 108±53 months (range: 14-180 months). Thirty-nine patients (47.6%) suffered from complete staghorn stones whereas it was of the partial type in 43. The stone free rate was 86.6% after one PCNL session. In total, seven patients referred for shock wave lithotripsy (SWL) and four cases were scheduled for the second PCNL session.

Conclusion: As in adults, PCNL can be used as a safe and effective treatment modality in children with staghorn stones. The complications and stone free rate of PCNL with adult-size instruments in pediatric patients are acceptable.

Video ePosters

Friday, October 20 - Sunday, October 22
0800-1800

VID.01

Laparoscopic Ureteroneocystostomy with Ureter Tailoring for Congenital Megarueter

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Introduction and Objective: Laparoscopic ureteroneocystostomy for congenital megaureter is technically challenging, because intracorporeal ureter tailoring is complex and time-consuming. We demonstrated modified extracorporeal ureter tailoring of megaureter with laparoscopic ureteroneoystostomy.

Materials and Methods: A 21-year-old female visited the outpatient clinic complaining of left flank pain. CT scan showed 7cm dilated ureter and hydronephrosis. MAG3 showed partial obstruction on left side. There was no reflux on voiding cystourethrogram. Patient under general anesthesia were placed in a supine position and we used four laparoscopic ports. The dilated ureter was dissected down to the bladder and cut at the distal point of stricture. The divided ureter was pulled out through a lateral port and tailored over 8Fr nelaton catheter. Tailored ureter with D-J stent was replaced into the abdomen. And finally we performed laparoscopic extravesical submucosal tunneling ureteroneocystostomy.

Results: Operation time was 210 minutes. There was no significant perioperative complication. Flank pain was relieved. CT and MAG3 scan showed improvement of the dilatation of the ureters and partial obstruction was regressed.

Conclusions: Laparoscopic ureteroneocystostomy with extracorporeal ureter tailoring is easy and straightforward technique for congenital megaureter.

VID.02

Laparoscopic Ureteral Reconstruction with Buccal Graft

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Introduction and Objective: We present a video showing the technique of using buccal graft to repair a ureteral stenosis.

Materials and Methods: Forty-six years-old male with right solitary kidney and a contralateral agenesia who had underwent a flexible ureteroscopy to remove an impacted 7 mm stone at upper ureter. After this procedure the patient stayed with double J stent for 30 days and one day after removal developed acute renal insufficiency. He had an attempt of laser ureterotomy but on the procedure it was identified by pyelography that the stenosis was 4.5 cm and the patient was referred to our centre. We performed a magnetic resonance that confirmed the stenosis.

Results: The patient was positioned in left lateral decubitus and we place two 10 mm and two 5 mm trocars as described for pyeloplasty. We accessed the retroperitoneal and found the upper ureter and dissected from the inflammatory tissue surround it. The ureter was open with a 11 scalpel blade and approximately 6 cm of the stenosis area was exposed until found normal tissue. The buccal graft was removed as the same technique used for urethroplasty and inserted by the trocar without any trauma for it. There was performed a continuous suture on the posterior and anterior face of the ureter to attach the buccal graft with PDS (polydioxanone) 5-0. Then the omentum was mobilized and wrapped the ureter to ensure the blood supply to the buccal graft. A Penrose drain was left for three days and removed. Forty-five days after surgery the double J was removed and patient is still under observation.

Conclusion: Laparoscopic ureteral reconstruction is a feasible surgery; it has the advantage of not opening the small intestine or other viscera. But it may have the risk of buccal mucosa retraction or ischemia if not secured attached. This is our first case and we will need a longer follow up to ensure the safety of the procedure.

VID.03

Posterior Retroperitoneoscopic Bilateral Adrenalectomy in Ectopic Cushing's Syndrome

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Introduction and Objective: Over the years, a number of different surgical approaches to the adrenal glands have been devised. Minimally invasive adrenalectomy has become the procedure of choice for benign adrenal pathology. Although the adrenal glands are located in the retroperitoneum, most surgeons prefer the transperitoneal laparoscopic approach to adrenal tumors. The purpose of this video is to show the feasibility of performing a posterior retroperitoneoscopic bilateral adrenalectomy in a woman with ectopic Cushing's syndrome.

Materials and Methods: A 23-year-old woman presented with past medical history of metastatic Pancreatic Neuroendocrine Tumor with ectopic production of Gastrin and ACTH-treated with Lanreotide since 2004. The patient was referred to the department of urology with Cushing's disease, refractory to medical treatment. The CT scan showed multiple liver metastases that collapsed the right adrenal space. The patient was placed in prone position and a posterior retroperitoneoscopic bilateral adrenalectomy was performed using 3 trocars per side.

Results: Three trocars were placed 2 centimeters under the 12th rib, between sacrospinalis muscle and posterior axillary line. A small cavity in the retroperitoneum was made with blunt finger dissection. Once the right adrenal space was created, we could identify the anatomic landmarks (psoas, diaphragm, liver). Dissection of the gland was begun with lower margin detachment from the upper kidney pole in a lateral to medial direction using 5 mm ultrasonic dissector. After exposing adrenal gland from surrounding tissue and medial isolation of the main adrenal vein, the vessel was clipped and divided with scissors. We repeated the same steps for the left side. The operation time was 103 minutes, with no postoperative complications. The patient had a fast recovery and was discharged on the third postoperative day. Cushing's syndrome symptoms resolved completely.

Conclusion: The posterior retroperitoneoscopic bilateral adrenalectomy appears to be a safe and effective technique, with short operative time and fast recovery, but a thorough knowledge of retroperitoneal anatomy is required.

VID.04

Synchronous and Simultaneous Posterior Reroperitoneoscopic Bilateral Adrenalectomy

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Introduction and Objective: Laparoscopic bilateral adrenalectomy is a challenging procedure that usually requires patient repositioning and long operative time. Posterior retroperitoneoscopic adrenalectomy, by providing direct access to the gland, allowing two surgical teams working together and avoiding patient repositioning, is an interesting approach in patients with bilateral affection. We describe the technique of synchronous and simultaneous posterior retroperitoneoscopic bilateral adrenalectomy in a patient with neurofibromatosis syndrome type 1 and bilateral pheochromocytomas.

Materials and Methods: A 25-year-old man with neurofibromatosis syndrome type 1 and past medical history of a kidney transplant was referred for 1-year severe refractory hypertension. A thorough evaluation was performed for possible secondary causes of hypertension. Clinical suspicion of pheochromocytoma was confirmed by 24-hour urinary catecholamine level and CT scan of the abdomen. The CT scan showed the right-sided adrenal mass of 45 mm and a left adrenal mass of 43 mm. With patient placed in prone position, using 3 trocars per side and with two surgical teams working simultaneously a posterior retroperitoneoscopic bilateral total adrenalectomy was performed.

Results: The operation time was 120 minutes and intraoperative blood loss was 300 ml. With no postoperative complications, the patient had a fast postoperative recovery and was discharged on the third postoperative day. Blood pressure becomes normal from 1st postoperative day without any drug. Histopathology report further confirmed the adrenal tumors were pheochromocytomas. There was no clinical or biochemical relapse during a follow-up period of 6 months.

Conclusions: Synchronous and Simultaneous Posterior Reroperitoneoscopic Bilateral Adrenalectomy is a safe and feasible technique in patients with bilateral pheochromocytomas.

VID.05

TUEB (Transurethral Enucleation of Prostate with Bipolar) Assisted TURP: A Video

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Introduction and Objectives: Enucleation of the prostate adenoma is a more complete way of managing an enlarged prostate. Optimal use of conventional equipment would be when existing technology can be adapted for a more thorough and complete surgery. We demonstrate our technique of using TUEB for a more complete TURP.

Materials and Methods: Olympus TURIS system was used, along with a special TUEB electrode. After placing the mucosal incisions, the apex and mid portions of the lobes were enucleated with the blunt spatula electrode. After this elevation the lobes were resected in a relatively devascularised field using the routine TURP electrode. Median lobe, if present was also resected in a similar fashion. Apical tissue anteriorly was resected with care.

Results: Intra operatively hemorrhage was relatively lesser than routine TURP. Resection of gland was more complete than routine TURP. Post operatively patients did develop temporary incontinence which was not seen after routine TURP.

Conclusion: TUEB assisted TURP involves using conventional bipolar instruments to achieve a more thorough and hemostatic resection. We describe our technique.

VID.06

UTUC Recurrence in a Remnant Ureteral Meatus: TURB Assisted Laparoscopic Partial Cystectomy

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Introduction and Objectives: Radical nephroureterectomy (RNU) with bladder cuff excision is the standard treatment for high risk upper tract urothelial carcinoma (UTUC). Resection of the distal ureter and meatus is important given the significant risk of recurrence at this location. We describe the management of a UTUC recurrence in a remnant ureteral meatus, following incomplete RNU.

Materials and Methods: We present a case of a 75-year-old woman with a past history of right RNU for a pT3 high grade UTUC of the renal pelvis 17 months earlier, that presented with a recurrence in the right ureteral meatus. The intramural ureter and meatus had not been resected in the RNU. A TURB 2 months earlier for a previous recurrence on the same site revealed a low grade pTa transitional cell carcinoma (TCC) and this time she presented with a 5mm papillary lesion protruding from the meatus. A MRI was made, showing the remnant ureter confined to its intravesical segment.

Results: The patient was managed by TURB assisted laparoscopic partial cystectomy. The polyp was resected and the meatus fulgurated by TURB. The resection fragments were evacuated and the bladder was washed with distilled water to prevent tumor seeding. 4 laparoscopy trocars were placed: a 12mm trocar at the umbilicus for the camera, a 10mm suprapubic trocar in midline and two 5mm trocars 2cm medial to the anterior superior iliac spine bilaterally. The partial cystectomy was delimited and guided by TURB since there was no extravesical ureteral segment present to guide the cystotomy. The surgical specimen was extracted with a laparoscopy retrieval bag and the bladder was closed by a two-layer running suture. The blood loss was less than 100mL and the patient was discharged on the second postoperative day. The pathological analysis revealed a low grade pTa TCC with negative surgical margins.

Conclusions: The chosen surgical approach proved a good minimally invasive option for the management of this case. The TURB allowed the resection of the tumor and helped guide the laparoscopic dissection and the partial cystectomy. The resectoscope's light, and the bladder wall deformation caused by its tip were particularly useful.

VID.07

Laparoscopic Distal Ureterectomy and Psoas Hitch for Ureter Urothelial Cancer

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Introduction and Objective: To describe pure laparoscopic distal ureterectomy and psoas hitch ureter reimplantation in the highly select patients with distal urinary tract urothelial carcinoma (UC).

Materials and Methods: Between January 2011 to December 2016, 62 patients underwent distal ureterectomy and psoas hitch ureter reimplantation. 5 patients received the operation due to distal ureter UC, others due to the benign condition, colon or ovarian cancer. All 5 patients received the renal-spare operation were solitary kidney or chronic kidney disease with solitary tumor status. Two patients received laparoscopic method, 2 received robotic method and 1 received open operation. We first took down bladder and identified the ureter. Then ureter was dissected down to the vesicoureteral junction. The intramural part of the ureter was dissected under the vision and sharply freed from the surrounding detrusor muscle of the bladder until the level of the ureteric orifice. Then distal ureter was early ligated. The detrusor muscle was further dissected away from the underneath bladder mucosa. Thus, a bladder cuff of mucosa-only could be excised. A continuous laparoscopic suture was taken at the edge of the dissected mucosa and the cuff which was excised. The ureter segment contained UC was also resected and removed early. Then we further took down the bladder for sufficient space to perform psoas hitch. Unilateral pelvic lymph node dissection was also done. Lich-Gregoir method was used for ureteral reimplantation.

Results: All the procedures were completed by laparoscopy. The operative time was 162 min. The mean blood loss was minimal. Preserved renal function was confirmed by renal function study done at postoperative 3 months. In our series, the median follow-up was 22 months. No major complications were noted. There was also no pelvic or bladder recurrences

Conclusions: The pure laparoscopic technique enabled complete removal of involved ureter and reimplantation of remain part. The operation time was shorter compared to the robotic method while offered compatible outcome. Short-term follow-up showed the oncological safety of the procedure in highly select patients.

VID.08

The New Generation Super-Mini Percutaneous Nephrolithotomy (SMP) System: A Step-by-Step Guide

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Introduction and Objective: To present our novel miniaturized endoscopic system and describe a step-by-step guide for successful implementation of the super-mini percutaneous nephrolithotomy (SMP).

Materials and Methods: The new generation SMP endoscopic system consists of (i) a 40,000-pixel super-mini nephroscope with an 8.0 F outer diameter and 7.5 F inner diameter dismountable sheath (ii) and a newly designed irrigation-suction sheath available in either 12 F or 14 F. The irrigation-suction sheath is a two-layered metal structure. The key feature of the irrigation-suction sheath is to allow irrigation and suction respectively (the inflow through the space between the two layers of the sheath, the outflow through the central lumen of the sheath). This property could improve irrigation and stone clearance despite extremely reduced instrument dimension. A total of 59 patients with renal stones underwent new generation SMP between April 2016 and December 2016. The percutaneous tract dilatation was carried out to 14 F. Cutting lithotripsy was performed using either holmium laser or pneumatic lithotripter. Stone fragments were sucked out by vacuum suctioning through the sheath. A nephrostomy tube or Double-J stent was placed only if clinically indicated. Low-dose CT was performed to assess the stone-free status on the morning after the procedure.

Results: The mean stone burden was 2.4 cm. Nine of the 59 patients had diabetes, and 5 had hypertension. SMP was completed successfully in all patients with a mean operative duration of 32.9 min and a mean 1.3 gm/dL hemoglobin decrease. The stone-free rate was 91.5%. Complications occurred in 5.1% of the patients, all of them were Clavien I (minor fever managed by antipyretic therapy), no transfusions were needed.

Conclusion: The new generation SMP system is safe, feasible, and efficient for managing moderate-size renal calculi with advantages of a small percutaneous tract, minimal risk of bleeding, high efficacy in stone clearance, improved visual field, short operative time and easiness to operate.

VID.09

Percutaneous Fluoroscopic Endoscopic Puncture of the Proximal Ureter for Recanalization of the Complete Ureteropelvic Junction Obstruction

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Introduction and Objectives: We present a video of the feasibility study of a new fluoroscopic endoscopic technique for the recanalization of the complete obstruction of the Uretero-pelvic junction (UPJ), using a puncture of the proximal ureter through the renal-pelvic wall, via the Amplatz sheath.

Materials and Methods: Three patients (36 to 62 years-old) with a history of open pyelolithotomy, presented large hydronephrosis. Retrograde uretero-pyelography showed a complete obstruction of the UPJ. Contrast media cannot pass into the pelvis. In 2 patients the stenosis was about 2 cm, and 1 patient had a stenosis of few millimeters. Under general anesthesia, the patients are placed in the split-leg modified lateral position. An attempt to force the obstruction with a stiff guidewire is not successful, even with a flexible ureteroscope. After, calyx puncture and dilation, a 24 F Amplatz sheath is placed. The inspection of the pelvic wall does not find the UPJ or its scar. A ureteral catheter is placed in the ureter and contrast media is injected. Under fluoroscopy, the Amplatz sheath is placed in front of the tip of the ureter and the ureteral catheter tip. The 18-Gauge needle is introduced in the Amplatz sheath, and the proximal urteral tip is punctured through the renal pelvis wall. A hydrophilic guidewire is advanced down the ureter. The nephroscope is introduced and the tract is dilated to 12 Fr and a safety guidewire is inserted. Endopyelotomy is performed with an electrode through the nephroscope. The pelvic wall, the tract and then the ureteral wall are incised with an electrode with the guidance of the guidewires. In the long strictures, A 3.5 needle-holder is inserted in the nephroscope and using a 13 mm needle suture, a suture is placed between the pelvic and the ureteral wall. Then, 1 or 2 double-J-stents are placed.

Results: The puncture of the ureteral end through the renal-pelvic wall or bladder was rapidly and easily performed, like calyx puncture. It had allowed guidewire insertion into the ureter, and had oriented the endopyelotomy and recanalization. The suturing was difficult due to fibrosis and the tissue edges were fixed far apart. The mean operative time was 154 minutes for the 2 cases in which the UPJ was sutured, and 35 minutes for the other. The mean postoperative hospital stay was 3 days.

For both patients with the long stenosis, retrograde pyelography showed a medium passage of contrast media through the UPJ, and a new JJ-stent was placed, with a follow up of respectively 15 and 13 months. For the patient with the short stenosis, 3 months retrograde pyelography showed an acceptable patent UPJ and the JJ-sent was removed. At 3 months ultrasound, the kidney is not dilated.

Conclusions: The puncture of the ureteral end through the renal-pelvic wall was possible, and it was easily performed. It had allowed insertion of at least of replaceable double-J-stent in complete stenosis, where all the other endoscopic techniques had failed, especially, in long UPJ stenosis.

VID.10

I Need an Incision Electrode through the Flexible Uretero-Renoscope for Retrograde Endopyelotomy

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Introduction and Objectives: We present a video of our experience of retrograde endopyelotomy using a guidewire as cutting electrode through the flexible uretero-renoscope.

Materials and Methods: A 40-years-old male patient had a recanalization of the left uretero-pelvic junction obstruction is programmed for control of UPJ patency with retrograde flexible ureteroscopy. Under general anesthesia, the patient is placed in the standard ureteroscopy position. Retrograde flexible ureteroscopy found a patent UPJ but with a mucosal diaphragm. Although, the flexible scope passes easily into the renal pelvis, Endopyelotomy is decided to have a wider UPJ. However, laser or a proper endoscopic flexible electrode, which can be used through the 3.6 Fr flexible uretero-renoscope working channel, is not available. What instrument can be used, which has a metallic core and less than 3 Fr diameter? Solution: A hydrophilic guidewire is used. Few millimeters of the rigid tip coating are removed to expose the tip of the metallic core. Then 5 to 10 cm of the metallic core floppy tip is exposed. The current is passed in this improvised electrode by connecting the exposed floppy tip with the electrode of the pencil handle of the electro-cautery unit. With its rigid tip first, the transformed guidewire is introduced through the flexible uretero-renoscope. Incision of the UPJ diaphragm is performed with cutting current. Double J stent is placed.

Results: retrograde endopyelotomy was possible using a hydrophilic guidewire as cutting electrode through the flexible uretero-renoscope. The UPJ diaphragm was incised. UPJ became wide open. Even little coagulation was possible with this electrode.

Conclusion: the hydrophilic guidewire was successfully transformed into a cutting electrode that was used through the 3.6 Fr working channel of the flexible uretero-renoscope. It was effective, and had allowed performing endopyelotomy incision and few bleeding cauterizations.

VID.11

An Alternative to an Endoscopic Electrode

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Introduction and Objectives: We present a video of our experience of the use of a ureteral catheter with its metallic stylet as an alternative to a proper endoscopic electrode. The use of this electrode is demonstrated in different endourologic situations all along the urinary tract.

Materials and Methods: Sometimes during endourology, there is a need to perform an endoscopic incision or electro cauterization. If a proper endoscopic electrode is not available, a ureteral catheter with its steel mandarin stylet can be used as an electrode. Few millimeters of the ureteral catheter are cut to expose the tip of the stylet. The current is passed in the electrode by connecting the stylet with the electrode of the pencil handle of the electro-cautery unit. Otherwise, a mosquito clamp is used to maintain the connection between both electrodes. Endoscopic incision is performed with the tip of the stylet which can be straight or curved. If the ureteral catheter has a metallic stylet with a large brass tip, this tip is used for cauterization. However, both tips can be used for coagulation. The ureteral catheter can be used through different scopes rigid or flexible, cystoscope, ureteroscope, ureterorenoscope, nephroscope.

Results: The ureteral catheter with its metallic stylet is an effective cutting electrode. It was used with cutting current for endoscopic incisions. In addition, it was successfully used with coagulation current for cauterization. Its use was illustrated for a bladder neck incision, retrograde ureterotomy and endopyelotomy, anterograde endopyelotomy, and UPJ and upper pole infundibulum recanalization. In all these locations, the incision electrode was effective and the incisions and hemostasis successful.

Conclusion: The ureteral catheter with its metallic stylet can be used as alternative to a proper endoscopic electrode. It was successfully used with different scopes and in different urinary tract locations.

VID.12

Robotic Boari Flap: Technical Modifications to Enhance Success

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Introduction and Objective: Management of long-segment ureteral strictures, especially recurrent strictures, is a challenge to the practicing urologist. Traditionally, such patients were managed with open surgical procedures. However, with advances and experience in robotic and laparoscopic techniques, these procedures can be managed using the robot.

Materials and Methods: The case is a 32-year-old male who underwent a right robotic Boari flap 11 months ago for an idiopathic mid-ureteral stricture causing flank pain. Postoperatively, his MAG3 renal

scans demonstrated declining renal function and increased drainage time. Preoperative imaging demonstrated a long segment right ureteral stricture starting from the level of S1 to the level of the ureterovesical junction. He elected to undergo a repeat robotic Boari flap creation. For technical modifications during the robotic procedure, the adequate measurement of the length and width of the Boari flap is crucial for adequate ureterolysis. Other modifications for the creation of the Boari flap to prevent shortening of the flap include interrupted sutures to maintain its length, a tension-free anastomosis and innovations in ease-of-stent placement. These modifications will be highlighted in the video.

Results: The procedure was safely performed with a minimal blood loss. This patient with a recurrent ureteral stricture has done exceedingly well and continues to be symptom-free.

Conclusion: Respecting traditional principles of reconstructive surgery including maintaining adequate vascular supply and a tension-free anastomosis is paramount. Utilization of appropriate technical modifications can increase the use of minimally invasive techniques, such as robotic surgery, in managing the unusual and difficult patient with newly diagnosed or recurrent ureteral strictures.

VID.13

Combined Robot Assisted Laparoscopic Nephrectomy and Ureterocystoplasty

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Introduction and Objective: We present the case of a 21 year old patient with severe neurogenic bladder dysfunction secondary to a menigomyelocele with Arnold-Chiari-malformation typ II. Urodynamic studies revealed sphincter-detrusor-dyssynergia in combination with increasing detrusor muscle overactivity and poor bladder compliance Bladder capacity was limited to 300ml. Treatments in the form of anticholinergic therapy and Botolinum Toxin injections were unsuccessful in reducing intravesicular pressure. Cystography revealed left-sided grade V vesicoureteral reflux and subsequent nuclear scintigraphy showed a non-functioning left kidney. In June 2016, we performed combined robot assisted laparoscopic nephrectomy and ureterocystoplasty.

Materials and Methods: We initially performed a left nephrectomy utilizing cephalic side-docking of the Robot from the left side of the patient. The robot was re-docked in a more caudal direction to facilitate further mobilization of the ureter to the level of the bladder. The spatulated ureter was looped to the shape of the letter U and the medial sides were sutured together creating a broad and long ureteral patch for the subsequent bladder augmentation. We performed a cystoplasty by suturing the ureteral patch to the open bladder wall.

Results: The patient's postoperative course was completely uneventful. The patient was discharged on the fifth postoperative day. Cystography performed 14 day post surgery showed no signs of urinary leakage and a nicely augmented bladder. Urodynamic studies 3-month post surgery demonstrated a drastic decrease in bladder pressure and marked improvement in bladder compliance. After a follow-up period of one year, follow-up investigations were excellent. The patient is still performing CIC without any complications. Bladder capacity improved up to 650ml.

Conclusion: Combined robot assisted laparoscopic nephrectomy and ureterocystoplasty is a feasible and safe minimally invasive technique and shows excellent results post operatively.

VID.14

Visual Dilatation Technique in Percutaneous Nephrolithotomy: An Initial Clinical Experience

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Introduction and Objectives: Tract dilatation is a crucial step in percutaneous nephrolithotomy which can be guided under fluoroscopy, ultrasound or combination of both techniques. It can still be difficult to ascertain the optimal depth to prevent over-dilation causing collecting system perforation and vascular injury or under-dilation making the establishment of access tract in a single attempt strenuous. Here, we present our initial clinical experience in using the novel technique of visual dilator system to obtain real-time visual confirmation of accuracy during percutaneous tract dilation.

Materials and Methods: The visual dilator system consisted of a transparent hollow dilator made of Polyvenyl chloride (PVC) and a 12F Mini Nephroscope inserted within its lumen. The nephroscope was connected to standard endoscopic camera system. The dilator system backloaded with access sheath was passed over guidewire to dilate percutaneous tract and position the access sheath under visual guidance. Saline was irrigated to maintain clarity during dilation. Between December 2015 and December 2016, the visual dilator system was used during percutaneous tract dilation in 13 PCNL cases with mild or above hydronephrosis.

Results: All tracts were successfully dilated in a single attempt. The intervening tissue layers, approach into target calyx as well as the access sheath placement could be visually monitored through the dilator wall to confirm accuracy in dilatation. Mean dilatation time was 3.4 ± 0.9 mins, hemoglobin drop was 1.4 ± 0.8 g/dL, primary stone-free rate and that after auxiliary treatment were 11/13 (84.6%) and 13/13 (100%) respectively. We experienced over dilatation in one of the initial cases. No complications like collecting system perforation, loss of access, transfusion and surrounding organ injury was experienced in rest of the cases. The X-ray exposure time during dilatation was significantly low. Larger number of cases and comparison with other dilatation technique are needed to further prove the efficacy of the technique which is under study.

Conclusion: PCNL access tract dilation using the visual dilatation technique is clinically feasible. It provides a real-time visual monitoring and confirmation of accuracy in dilation and lower x-ray exposure time during tract creation. It may improve the overall safety and efficacy of the PCNL procedure.

VID.15

Office-Based Targeted MRI/US Fusion Prostate Cancer Cryoablation

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Introduction and Objective: Level I evidence from now three clinical trials (SPCG4, PIVOT and PROTECT) has shown equivalency in cancer control outcomes between surveillance, surgery and radiation. However, there is a detrimental effect in quality of life outcomes associated with treatment arms. The introduction of fusion imaging - MRI/US - has led to incremental precision in the diagnosis of Prostate Cancer opening the door to potential targeted approaches aimed to cancer destruction while preserving normal tissue function. We began our MRI/US Fusion Targeted Prostate Cancer Cryoablation Program in 2013. Here we present our technique and results.

Materials and Methods: NCT02381990- clintrials.gov contemplates the thorough evaluation of Office based prostate cryoablation. Prospective collection of diagnostic information (age, PSA, DRE findings, clinical stage, WHO Modified Gleason scores). We used fusion software to characterize the lesion, the prostate, urethra, and seminal vesicles on multiparametric MP-MRI findings and then to co-register MRI/US Fusion Treatment execution. Cryoablation was performed following co-registration fusion of MRI/US with 2 freezing/thawing cycles. Treatments were performed in Miami and Madrid. Clinical information was digitized into the Focalyx app (Apple IOS). Patient reported quality of life measures are directly recorded into the app. The video shows our fusion cryoablation technique -FocalyxTxCryo.

Results: The video shows our technique that has been employed in 361 MRI/US fusion cryoablation procedures successfully performed among 317 patients between 2013 and March 2017. With a median follow up of 2 years, 44 required re-treatment and 12 were converted to surgery(n=6) or radiation (n=6). A median PSA decrease of 50% was observed. In men with SHIM scores 5 or better, by 3 and 6 months, 61% and 72%, respectively had recovered erections to their baseline. Ejaculation was preserved in 69% of these men. Average urinary function flow rates were improved by 71% in 234 men with 3 months' post cryo flow data.

Conclusion: This is currently an early experience of a novel series of men managed with MRI/US Office based targeted cryoablation. Importantly the procedure is amenable to local anesthesia or monitored sedation without significant morbidity. Early data shows promising results and an alternative to surveillance.

VID.16

MRI/US Fusion Transperineal Prostate Biopsies under Local Anaesthesia

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Introduction and Objective: Prostate cancer is the most common solid malignancy, with one out of six men being diagnosed during their lifetime, in western Europe and the United States (US). In the US alone, over 1.3 million men undergo a prostate biopsy procedure -the clear majority is performed transrectally (TR). The approach is common because the alternative transperineal (TP) approach is perceived to require general anaesthesia, requires longer time and is economically disadvantageous. However, there are major drawbacks to TR prostate biopsies. Urosepsis is certainly the most devastating one. Such terrible outcome is too common, as 4% of patients require hospital admission post TR prostate biopsy. Multiparametric MRI has enhanced accuracy and significance of prostate cancer detection. Herein we present our MRI/US Fusion of TP Prostate Biopsy technique under local anaesthesia with results from 3 institutions in Europe and the US

Materials and Methods: We prospectively collected the information of eligible men -Elevated PSA, Abnormal DRE, an abnormal MRI or a diagnosis of prostate cancer) at the time of TP MRI/US Fusion prostate biopsy, performed under local anaesthesia or mild sedation. We used MIM Software-FocalyxBx planning to characterize the lesion, the prostate, urethra, and seminal vesicles on multiparametric MRI. The procedure and pathological information was digitalized into the Focalyx app (Apple IOS). The video shows our surgical technique.

Results: Since 2014 a total of 507 TP MRI/US Fusion Prostate Biopsies at 3 separate centres (URN n=211 and Andros n=124) under local anaesthesia and 172 under mild sedation at Lyx Spain were performed. The Sensitivities based on modified Pi-RADS Vesion2 system were: Yellow Signal "Equivalent to Pi-RADS 3" - 63%; - Pink Signal "Equivalent to Pi-RADS4" - 79%; Red lesion < 1.5cm "Somewhat pi-RADS 5 but shall be 4" - 90%; Red lesion > 1.5cm "Somewhat pi-RADS 5" - 99%. No Color 12%. No Urosepsis episodes were recorded. Urinary retention was observed in 3 patients.

Conclusion: The field of Urology continues to challenge us to be better and there are new avenues. Fusion transperineal prostate biopsy under local anaesthesia is a reproducible, accurate and preventing urosepsis reality.

VID.17

MRI/US Fusion Guided Targeted Therapy of Prostate Cancer Applied to Irreversible Electroporation (IRE)

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Introduction and Objective: Level I evidence from now three clinical trials (SPCG4, PIVOT and PROTECT) has shown equivalency in cancer control outcomes between surveillance, surgery and radiation. However, there is a detrimental effect in quality of life outcomes associated with treatment arms. The introduction of fusion imaging - MRI/US - has led to incremental precision in the diagnosis of Prostate Cancer opening the door to potential targeted approaches aimed to cancer destruction while preserving normal tissue function. Here we present a case report using Irreversible electroporation (IRE) and targeted MRI/US Fusion.

Materials and Methods: We present the case of a 57 y/o spanish male with a PSA of 8 mg/ml and a left sided latero-anterior lesion (pi-RADS4 on MRI). Biopsy proven Gleason 3+4 (WHO 2/5). The diagnosis was a T1c prostate cancer with a SHIM score of 22 and IPSS of 8. We elected Targeted IRE as means of treatment. We characterized the lesion, the prostate, urethra, and seminal vesicles on multiparametric MRI. Realtime co-registration between MRI findings and ultrasound was performed via the transperineal approach. IRE was performed using NanoKnife System (Angiodynamics). Treatment were performed in Madrid. Clinical information was digitized into the Focalyx app (Apple IOS). Patient reported quality of life measures are directly recorded into the app. The video shows our fusion IRE technique -FocalyxTxNanoKnife.

Results: Treatment was accomplished as planned. It was performed in hospital operating room. OR time was 63 minutes. A total of 90 pulses with 1,500 to 3,000 volts were applied in 6 directions - as shown and explained in the video. The patient was discharged without a Foley catheter in the first 24 hours.

Conclusion: This case shows the feasibility of MRI/US Fusion targeted treatment of prostate cancer. In this video, we explain our technique that shows added layers or certainty in reaching and treating the targeted lesions. Further investigations are imperative to define the role of this technique in men with clinically localized prostate cancer.

VID.18

Dorsal Onlay Buccal Mucosal Graft Urethroplasty for Membranous Urethral Strictures after TURP or Radiation Therapy

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Introduction and Objective: To demonstrate use of buccal mucosa graft dorsal onlay urethroplasty for reconstruction of membranous urethral stricture caused by TURP or radiation therapy.

Materials and Methods: Preoperatively, all patients were evaluated with radiographic imaging and endoscopy, and demonstrated urethral strictures with membranous involvement. Dorsal buccal mucosal onlay urethroplasty performed via a one-sided dissection as described by Kulkarni and Barbagli was performed in all patients. This technique was modified by carrying the dorsal urethrotomy proximally through the membranous urethra and sharply excising a wedge of scarred intracrural tissue to create adequate bed for grafting. Patients were seen at 3 weeks for catheter removal, and at 4, 8, 12 months, then yearly for assessment of surgical and patient-reported outcomes.

Results: Nineteen consecutive men with a mean age 66 years (47-72) underwent membranous urethral stricture repair and were included in the study. Nine patients had prior TURP, 6 had prior radiation therapy with prostate in situ, and 4 patients had radical prostatectomy follow by radiation therapy. All patients returned home within 23 hours after operation. At a mean follow up of 18 months (4-37), one patient required an additional procedure for stricture recurrence. Improvement was observed with respect to mean maximum flow rate (4.5 to 21 cc/sec), PVR (121 to 53 cc), and International Prostate Symptom Score (22 to 8). Fourteen of the 19 patients (74%) were continent pre-operatively. None of the patient developed de novo urinary incontinence.

Conclusions: Membranous urethral strictures can be effectively treated using this dorsal BMG onlay technique which avoids circumferential urethral mobilization, urethral transection, or perirectal dissection.

VID.19

Urethral Reconstruction Using Tissue Engineered Oral Mucosa Graft (Mukocell®) in Onlay Technique

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Introduction and Objective: An open reconstruction of the urethra in recurrent long-range urethral strictures with an oral mucosa grafting is the method of choice and achieves good results up to 75-80% with long-term follow up. Disadvantages of using of native oral mucosa are complications in the mouth area such as swelling and scarring, injuries of the salivary gland opening, and problems with the intake of food and restriction of the opening of the mouth. There is currently an alternative to the removal of the larger areas of oral mucosa: urethroplasty with MukoCell® which is available in our Department since 05/2016.

Materials and Methods: Between 05/2016 and 03/2017, a total of 15 patients with recurrent urethral strictures underwent urethroplasty with MukoCell. Mean patient age was 69.5 years (range 39 to 87). Mean hospital stay was 5 days. There were 10 and 5 patients with bulbar and penile strictures respectively. 4 patients have both stricture localizations. Three weeks prior to the operation we removed a very small piece (3x3 mm) of the oral mucosa in local anesthesia. Cells were isolated therefrom and cultivated in

an external laboratory (Urotiss Europe GmbH, Dortmund) through tissue engineering within three weeks to a 3x4 cm large mucous membrane for the grafting. The operative technique was performed in onlay technique.

Results: Mean operative time was 80 minutes (range 70 to 150). Mean stricture length was 4 cm (range 2-7). None perioperative hemorrhage occurred in all patients. The mean post-operative uroflow rate was 27 ml/s. The mean follow up was 10 months (3-11). Two patients had developed a recurrence of the stricture (with penile localization and mean 5 previous endoscopic operations.

Conclusion: The effectiveness of urethroplasty using MukoCell was 86% and was not inferior to the conventional method with native oral mucosa with advantages of avoiding excision of larger segments of the patient's oral mucosa and preventing associated complications, shortening the operating time, and simplifying the surgical technique. Larger patient series are planned.

VID.20

Penile Revascularisation for Vasculogenic Impotence after Pelvic Fracture Urethral Injury

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Introduction and Objectives: Patients with pelvic fracture urethral injuries (PFUI) may have Vasculogenic impotence. Also the success of anastomotic urethroplasty for PFUI depends on the vascularity of the urethra. Urethral blood supply is dependent on antegrade supply via the cavernosal and bulbar vessels and retrograde via the dorsal arteries. Bulbar urethral arteries are surgically divided during anastomotic urethroplasty. Traumatic vascular injuries to internal pudendal or dorsal penile artery may compromise the blood supply to the urethra resulting in bulbar urethral ischemia or necrosis. Patients with bilateral injury to vessels have Vasculogenic impotence. The aim of our study was to evaluate improvement in erectile function after penile revascularization.

Materials and Methods: We included all patients with PFUI who underwent penile revascularization at our institute.

The procedural steps were a pre-operative penile Doppler, midline abdominal incision, dissection of inferior epigastric arteries, exposure of dorsal penile vessels and vascular anastomosis using loupes and fine sutures to perform anastomosis between inferior epigastric artery and dorsal penile artery or vein. Post operatively patients are put on clopidogrel 75 mg daily for 6 months. Low dose tadalafil is started early in postoperative period. Sildenafil is started after 3 months. Success was determined as per the IIEF score postoperative. Color Doppler of penile vessels was done at 3 and 6 months.

Results: Nine patients underwent penile revascularization. Median follow up was 59 months. Seven patients achieved good erections post operatively supported with sildenafil.1 patients had partial erections while in 1 patient there was no improvement.

Conclusion: Patients with PFUI with Vasculogenic impotence are usually treated with sildenafil and intracavernosal injections. In case of no satisfactory improvement permanent penile prosthesis insertion is recommended. We suggest Penile revascularization to improve blood flow in dorsal penile vessels .Jordan et al have reported improved success rates of anastomotic urethroplasty in patients with PFUI and concomitant vascular injury with pre-operative penile revascularization. Penile revascularization can be considered in select group of patients with Vasculogenic impotence.

VID.21

Anastomotic Urethroplasty without Transection and Placement of Graft for Short Non Traumatic Bulbar Urethral Strictures

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Introduction and Objective: To report our experience with anastomotic urethroplasty without placement of graft and transection in patients with non-traumatic short bulbar urethral strictures.

Materials and Methods: A total of 21 patients of short bulbar non-traumatic underwent this procedure from 2102-2016. This involved opening urethra dorsally at stricture site, partial excision of scar with superficial spongiofibrosis and transverse closure of dorsal urethrotomy. The range of follow-up was 4-33 months and for 17 patients the follow up of more than 1 year. Stricture length was mean 1 cm (mean 8mm-14mm).

Results: Patients were followed by voiding symptoms, urinary flow rates and postvoid residue. Out of 17, two patients underwent intervention (VIU-1, Dilatation-1). Other (n-4) patients are voiding well with normal flow rates on follow-up.

Conclusions: This non-transecting anastomotic bulbar urethroplasty technique avoids transection of urethra and placement of graft and is effective for the management of non-traumatic short bulbar urethral strictures.

VID.22

Cecil's Two Stage Procedure for Sclerofibromatosis of the Penis

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Introduction and Objective: Sclerofibromatosis of the penis is also known as paraffinoma of the penis, siliconoma of the penis, cicatrix of the penis. Many of the case are attempts to make the penis bigger, by injecting various type or oil to the penis skin, or more recently by wrapping inflamation inducer leafs. The underlying problem is the misconception of patients that larger penis size results in better sexual performance and satisfaction. In many cases, the injection occurs in a group event where several men are injected together in the same setting by traditional shamans or their peers. Various substances have been encountered in practice, among others hair oil, paraffin, and silicone. Initially a bulking effect of the penis is observed, but over longer time of this painless mass evolves into devastating complications. Patients present with acute complaints of acute pain, genital skin irritation, abscess formation, and in some cases Fournier gangrene. Chronic complaints of this condition are suffered both by the patient and his partner, painful erection, dyspareunia, reduced sexual image leading to rejection of sexual activity by the partner. Complete surgical excision of foreign body and affected skin is the best option to resolve this condition and return to sexual activity. Coverage of the tissue defect has been described in literature using skin grafts and flaps.

Materials and Methods: In our center we have experience of treating 328 patients in the period of 2008-2016. The patients work as sailors, soldiers, mine workers, and in rare case high school students. Age range is 19-66 years old. Injections are commonly performed by lay person, and rarely by medical personnel and associated professions.

Results: We have very good result with this technique, 224 patients (68%) finished the second stage of this procedure. There are 65 patients (19%) satisfied with the first stage procedure. Complications are rare, hematomas in 4 patients, penile shortening in 2 patients, urethrocutan fistula in 2 patients and necrosis of penile skin in 1 patient

Conclusion: This technique gives a very good result with only a small number of complications.

VID.23

Retroperitoneoscopic Ureterolithotomy for Large Upper and Middle Ureteral Stones

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Introduction and Objective: Despite being associated with a high stone free rate, laparoscopic ureterolithotomy is not considered a first-line therapy, and is often reserved for cases of large impacted ureteral stones and when the less invasive approaches have failed. We present step by step a retroperitoneoscopic ureterolithotomy for a large impacted proximal ureteric stone and report our initial series in this approach.

Materials and Method: The video concerns a 28-year-old female with previous history of kidney stones who required placement of a right double pigtail ureteral stent during the 32nd gestational week due to persistent pain secondary to a 30x15mm impacted proximal ureteral stone. After labour and following failure of ESWL, retroperitoneoscopic ureterolithotomy was proposed. The patient was administered general anesthesia and positioned in left flank position. A 12-mm skin incision was made distal and anterior to the tip of the 12th rib, muscles were split and dorsolumbar fascia opened. Blunt dissection of the retroperitoneal space was achieved with the tip of the index, and peritoneum gently pushed anteriorly. A 12-mm port was placed and CO2 pressure mantained at 12mm Hg. Two additional ports were placed above the iliac crest: a 10-mm port on posterior axillary line for the camera and a 5-mm working port on the anterior axillary line. Following identification of quadratus lumborum and psoas muscle, dissection of lumbar ureter was

facilitated by the lithiasic protrusion. Longitudinal ureterotomy was performed over the impacted stone, which was extracted and placed inside a specimen retrieval system (Endobag™, Covidien, Dublin, Ireland). The ureteral stent was identified and the ureteral incision closed with 4-0 polyglactin interrupted suture (Vicryl®, Ethicon Endo-Surgery, Cincinnati, OH, USA). A Jackson-Pratt drain was left in place through the 5-mm port and port site closure was completed.

Results: During the last four years, four patients were submitted to retroperitoneoscopic ureterolithotomy. Three females and one male with a mean age of 43-year-old (28-59) were treated. Two of the patients received previous ESWL without fragmentation. Litiasis was located in upper and middle ureteral in half of the cases each, being right sided in three of the patients. Mean stone size was 28mm (20-33) and operative time 98 minutes (90-110), with negligible blood losses. All patients presented uneventful postoperative period, with urethral catheter and drain tube being removed at 48 and 72h, respectively. Hospital discharge was at 72h and ureteral stent removal at week 6 in the outpatient clinic. All cases were stone free and 6 month follow up intravenous urography revealed no residual ureteral calculi and ruled out the presence of stenosis or fistula. Infrared spectroscopy indicated stones were composed of struvite and carbonate apatite and of calcium oxalate in two cases each.

Conclusion: Despite not being a first-line treatment for ureteral stones due to its increased invasiveness and hospital stay when compared to ESWL and ureteroscopy, laparoscopic ureterolithotomy is a feasible and reproducible approach, presenting high stone free rate and low incidence of complications. It is particularly useful in the management of large sized middle and upper ureteral calculi. Randomized studies comparing the different approaches on these calculi are needed.

VID.24

Paediatric Scattered Lithiasis: A Rational Use of Endourology

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Introduction and Objective: Paediatric urinary lithiasis is a rather uncommon condition, with the vast majority of the cases being successfully managed with shock wave lithotripsy (SWL). Endourology is then indicated after SWL failure or, as a first indication, for highly complex situations. A paediatric patient with complex lithiasis is presented, who was managed with a rational combination of endourological approaches as first indication.

Materials and Methods: 2 year-old child, with recurrent urinary tract infections. Multiple radiopaque calyceal stones in the right kidney (aggregate surface 350 mm2), ipsilateral ureteral calculus (8x6mm) and 2 bladder calculi (8x7mm, each). This renal unit has a normal function, assessed by DMSA-scan.

Results: Percutaneous approach through the middle calyx under ultrasound control. Tract dilation up to 16Ch with minipercutaneous set. Flexible ureteroscopy (FlexURS) and in situ lasertripsy of the ureteral stone. The renal stone burden made it impossible to grasp and pull out the calculi with the FlexURS. Hence, the tract was dilated up to 24Ch to perform standard percutaneous nephrolithotomy (PCNL), and all the calculi were entirely removed with flexible nephroscopy. Percutaneous cystolithotomy under endoscopic and ultrasound control in order to remove the bladder calculi. An 8Ch bladder catheter and a 16cm/4.8Ch double J stent were left in place, without nephrostomy tube or suprapubic catheter. Operating and fluoroscopy times, 181 and 0.5 minutes, respectively. Hospital stay 7 days, without perioperative complications. After 3 months, the patient is asymptomatic without evidence of stones in the ultrasound scan.

Conclusion: SWL is the main indication for paediatric urinary lithiasis treatment. However, in highly complex cases (whether due to the stone burden or its distribution in the urinary tract), a rational use of endourology allows for a successful outcome with minimal morbidity. Previous expertise in adults is of utmost importance before carrying out these approaches in children.

VID.25

Optical Biopsies for the Diagnosis of Upper Tract Urothelial Carcinoma: How We Do It

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Introduction and Objective: Accurate risk stratification of upper tract urothelial carcinoma (UTUC) is essential for the selection between radical nephroureterectomy and endoscopic treatment. The main tumour-specific characteristics for the risk stratification are size, grade and stage. However, the current diagnostic approach has limitations. Up-staging or up-grading of histopathology from endoscopic biopsies is observed regularly and ~20% of biopsies are non-diagnostic. Moreover, this approach lacks real-time histopathologic information. The potential of Optical Coherence Tomography (OCT) and Confocal Laser Endomicroscopy (CLE) for intraoperative diagnosis of UTUC is investigated. These probe-based imaging techniques may allow for real-time 'optical biopsies' during ureterorenoscopy. The aim of this video presentation is to demonstrate the application of these novel techniques for UTUC diagnosis.

Materials and Methods: We performed OCT and CLE imaging during ureterorenoscopy in 27 patients with a suspicious lesion in the upper tract. The OCT Dragonfly 2.7Fr sideward-looking probe (St Jude Medical) was introduced via the ureteroscope. OCT yielded cross-sectional images of the upper tract with a resolution of 10 µm and an image depth of ~2 mm. After OCT imaging, 0.3–1.0 mL of 2.5% fluorescein was flushed into the upper tract for CLE imaging. The CLE UroFlex 2.6Fr forward-looking probe (Mauna Kea) was introduced via the working channel and placed into contact with the lesion for imaging. The CLE image resolution was 3.5 µm with an imaging-depth of 40-70 µm. After optical imaging, endoscopic biopsies were taken for histopathology.

Results: Correct positioning of the probes with respect to the lesion yielded high quality images. The evaluation of microarchitectural features on CLE images allowed for judgement of tumour grade. Tissue layer delineation enabled tumour staging on OCT images. Quantitative analysis of the attenuation coefficient on OCT images facilitated tumour grading. In this cohort, no complications related to OCT or CLE imaging occurred.

Conclusions: OCT and CLE can be applied safely during ureterorenoscopy for 'optical biopsies' of UTUC. The qualitative and quantitative histopathologic information of these 'optical biopsies' may enable intraoperative risk-stratification for optimal treatment selection. The diagnostic value of OCT and CLE in comparison to histopathology will be analysed in near future for this cohort.

VID.26

Novel Retrograde Percutaneous Technique of Lead Placement for Chronic Tibial Nerve Stimulation

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Introduction and Objective: This video demonstrates the retrograde approach for percutaneous lead placement for chronic tibial nerve stimulation. This technique can be done under local anesthesia in the office setting.

Materials and Methods: This video reviews the cadaver anatomy of the tibial nerve at the ankle then demonstrates the retrograde percutaneous approach for a tibial nerve lead in a patient in the office setting. The lead is placed percutaneously with the guidance of a combination of 1) bony landmarks 2) ultrasound and 3) fluoroscopic imaging. This video reviews our cadaver studies that showed leads placed retrograde (distal to proximal) was more reliably predicted using bony landmarks, was easily observed with ultrasound, and resulted in consistently more parallel lead placement.

Results: The retrograde approach, starting at the level of the medial malleolus, about 1 finger breadth behind (in general about 1/3 the distance from the medial malleolus to Achilles tendon) penetrates the fascia of the lower leg to enter the space adjacent to the tibial nerve. Testing of the finder needle for motor and sensory response guides lead placement. Wireless lead stimulation is demonstrated.

Conclusion: We report a novel, safe retrograde method of percutaneous tibial nerve lead placement. The retrograde approach, starting posterior to the medial malleolus, was easier and reproducibly placed a more parallel lead that may optimize tibial nerve stimulation. Ultrasound was effective in localizing the tibial artery to aid orientation and depth of placement of the stimulation lead and maximizes safety. We are optimistic that this minimally invasive retrograde percutaneous approach can be done in the physician's office under local anesthesia.

VID.27

Zero Ischaemia ICG Assisted Laparoscopic Partial Nephrectomy

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Introduction and Objective: Perinephric "toxic fat" has always been a challenge during partial nephrectomy. The lack of clear margin for dissection and increased bleeding encountered makes it particularly difficult to excise the tumour in its entirelity whilst ensuring adequate repair of parenchymal defect. Indocyanine green (ICG) allows excellent delineation of renal vasculature and emboldens our attempts in super-selective clamping thereby reducing warm ischemia during partial nephrectomy. We explore the use of ICG combined with technique of enucleation in a case of laparoscopic partial nephrectomy where toxic fat was encountered.

Materials and Methods: Transperitoneal laparoscopic left partial nephrectomy was performed for a case of a 3.4cm tumour (nephrometry score 8A). Near-infrared fluorescence imaging with intra-operative administration of ICG was employed to aid in super-selective clamping of the renal artery. Perinephric toxic fat was encountered precluding clear margin for dissection and enucleation of the renal tumour was performed laparoscopically with satisfactory results.

Results: Operation lasted 170mins; blood loss of 100ml, operatoin was operated entirely with zero ischaemia to left kidney. On day 8 post surgery, patient was discharged, stable and well. Histology showed papillary renal cell carcinoma, pT1a, Mostly grade 2, with focal grade 3 features. Tumour is confined to kidney, pseudocapsule of tumour was intact On follow up, patient has been well, experienced no surgical complication and follow up scans have shown no recurrence of diases.

Conclusion: Enucleation is a safe and feasible technique for partial nephrectomy in cases of perinephric "toxic" fat. Coupled with ICG-assisted super selective clamping zero ischaemia partial nephrectomy can be achieved.

VID.28

Optimizing Diagnosis of Urothelial Bladder Cancer with Blue Light Cystoscopy via Recognition of False Positive Lesions

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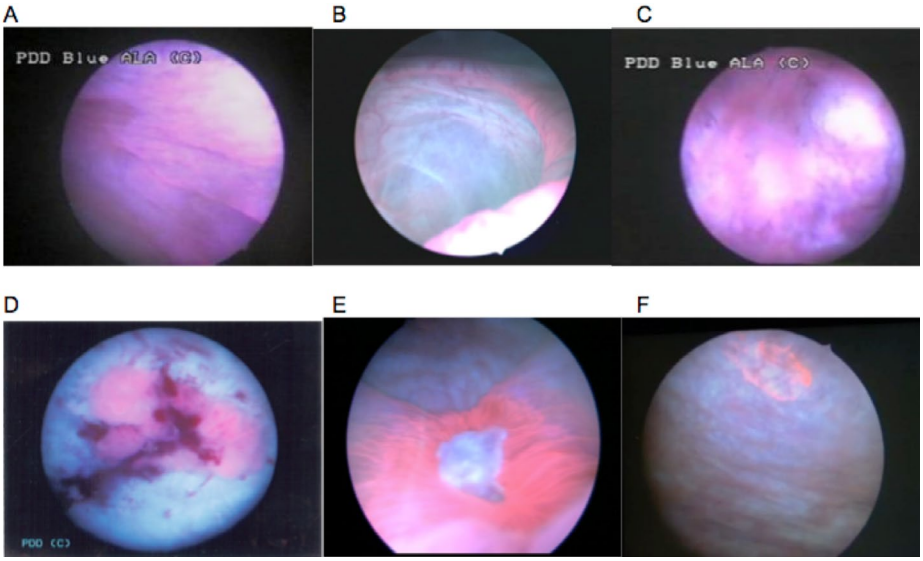
Introduction and Objectives: Blue Light Cystoscopy (BLC) using hexaminolevulinate (Cysview) improves the detection of non-muscle invasive bladder cancer (NMIBC). However, false-positive (FP) fluorescence can occur for various reasons and can vary among different series. Studies have shown that FP rates are not significantly different from white-light (WL) cystoscopy. We evaluated different scenarios producing false-positive in BLC.

VID.28, Figure 1. False-Positive Scenarios in Patients with Bluelight Cystoscopy



Materials and Methods: Under IRB approval, we prospectively enrolled consecutive patients undergoing transurethral resection of bladder lesions into a blue light cystoscopy registry between April 2014 and Dec 2016. Several cases are highlighted in the video demonstrating cystoscopic view under white light (WL) and blue light (BL) in specific circumstances increasing the chance of detecting a FP lesion.

Results: BLC with Cysview® is demonstrated in several challenging cases for the detection of NMIBC as shown in Figure 1. Possible FP scenarios include: tangential views of the bladder neck or side walls (a), trigone, trabeculations or diverticula (b); In setting of inflammation like Cystitis (c), post intravesical therapy, i.e. less than 6-weeks interval from prior BCG (d), prior resection within 6 weeks (e), very bright tiny spots (f), site of ureterectomy/bladder cuff resection; Early-fading lesions (following irrigation). Unnecessary biopsy of these lesions can be avoided through simple techniques such changing the angle of the cystoscopic view, several rounds of irrigation, and avoiding blue light cystoscopy too early after BCG instillation or prior resection.

Conclusions: Use of blue light cystoscopy with Cysview® can help with the detection of NMIBC as well as CIS in patients undergoing TURBT for bladder cancer. The reported false-positive rates of BLC will decrease with experience and recognition of the above-mentioned scenarios.

VID.29

Videolaparoscopic Correction of Uterine Prolapse in a Virgin Patient

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Introduction and Objectives: Pelvic organ prolapse is a prevalent disease in women of advanced age. In this case, however, we are faced with a young patient (23 years old) with grade III uterine prolapse, due to Joint Hypermobility Syndrome, a congenital collagen disease that predisposes women to the development of pelvic organ prolapse. The patient had urinary difficulty requiring standing, curving to reduce prolapse and then start urination. The objective is to demonstrate that videolaparoscopic technique is feasible and a good alternative for the treatment of uterine prolapse in young and sexually virgin women.

Materials and Methods: In this technique, after introducing the trocars, we started to separate the bladder and vagina and opene the peritoneum anterior to the uterus. Next, we perform a maneuver by attaching the sigmoid colon to the left abdominal wall, in order to better expose the promontory, so that we can open the peritoneum posterior to the uterus and medially tunnel the right uterosacral ligament, transfix the broad ligament of the uterus and pass the end of a polypropylene mesh through this tunnel to the posterior region of the uterus. Next, we repeat the same maneuver on the other side so that the mesh surrounds the anterior portion of the cervix while its two extremities are posterior to the uterus. The mesh is fixed with two to three points on the anterior surface of the uterine cervix and its two extremities are fixed to the promontory in the anterior longitudinal ligament of the spine, in the projection of the vertebral body, at S2 level, escaping from the intervertebral disc. At this point it is important for the helper surgeon to push the uterus with an uterine manipulator to remove tension from the mesh as the surgeon tightens the knot. Finally, we close the peritoneum with continuous suture.

Results: As we can see in the post-surgical physical examination video, uterine prolapse was successfully corrected, with good recovery and without postoperative complications.

Conclusions: The videolaparoscopic technique is feasible for correction of uterine prolapse, being effective and safe and is especially indicated in the case of virgin women.

VID.30

Robotic Assisted "Davinci" Redo Pyeloplasty

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Introduction and Objective: We reviewed a clinical case of Robotic redo Pyeloplasty for a right upper ureteric stricture.

Materials and Methods: A 30-year-old female presented to the Urology Outpatient Clinic (Hamad General Hospital) complaining of right loin pain for the past 10 years.The pain was on & off, Mild in severity, responding to analgesics, non-radiating, no exacerbating or alleviating factors, not associated with LUTS, no hematuria, nor she gave any past history of urinary tract infections. The patient is known hypothyroid and gave history for a previous DJ insertion 9 years in the same side and was removed 3 months after insertion as her symptoms did not improve. She had a normal abdominal examination & normal blood labs including her renal functions. A preoperative renogram showed evidence of ureteric obstruction, so cystoscopy & retrograde pyelography was done, showed a stricture near the right Pelvi-ureteric Junction. The Patient underwent Robotic exploration showing 1.5 cm right upper ureteric small stricture, were resection and anastomosis was done with DJ insertion. The operation went smoothly, so did the postoperative period, DJ stent was removed after 6 weeks and the patient presented to the Emergency Department within 24 hours of the DJ removal with same complaint. She had a CT KUB with contrast showing the upper ureteric stricture again, she underwent Cystoscopy, right RGP and DJ stent insertion as an Emergency in December 2015. Available options are A) Endoscopic Antegrade and Retrograde: Balloon Dilatation, Cold Knife Resection, Laser Resection, Cutting Balloon Catheter, B) Open Pyeloplasty, C) Laparoscopic Pyeloplasty D) Robotic Assisted Redo Pyeloplasty.

Results: Patient had a smooth postoperative course, discharged without Foley's on her third postoperative day, DJ stent was removed 4 weeks after and has been following in the clinic since then with no new complaints. Her postoperative Renogram showed the relive of obstruction.

Conclusion: Robotic assisted "Davinci" Redo Pyeloplasty is a safe procedure for recurrent upper ureteric strictures requiring treatment, the insertion of DJ stent facilitated the surgery.

VID.31

Simultaneous Bilateral Laparoscopic Adrenalectomy for a Multiple Endocrine Neoplasia Type IIB Syndrome with Bilateral Pheochromocytoma

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Introduction and Objective: Multiple Endocrine Neoplasia (MEN) is a rare group of conditions affecting several endocrine glands. MEN type IIB is characterized by the presence of medullary thyroid cancer, neuromas, Marfanoid body habitus and pheocromocytomas. As for other types of pheochromocytomas, complete surgical resection is indicated. Over the past decades, the use of minimally invasive approaches in adrenal surgery has become widespread and, for most indications, there has been as paradigm shift from open to laparoscopic surgery. Management of bilateral pheochromocytoma is challenging, due to the risk of severe hemodynamic instability and the presence of hormonal imbalance.

Materials and Methods: The authors present a video of simultaneous bilateral laparoscopic adrenalectomy for bilateral pheochromocytoma.

Results: A 23 years-old male with Marfanoid body habitus and mucocutaneous neuromas was diagnosed with MEN type IIB syndrome following the identification of medullary thyroid cancer. Genetic testing confirmed the presence of RET gene heterozygotic mutation. No clinical, laboratorial or radiologic evidence of pheochromocytoma was present. The patient remained under regular endocrine surveillance. At the age of 29, an asymptomatic elevation of plasmatic metanephrines led to a repeat radiologic evaluation. Abdominopelvic computed tomography identified bilateral adrenal nodules (30 and 16mm in diameter, at the left and right adrenals, respectively), with heterogeneous enhancement and unspecific washout. MIBG (Metaiodobenzylguanidine) scintigraphy was compatible with bilateral pheocromocytoma. The patient was admitted for preoperative hemodynamic and hormonal optimization. A simultaneous bilateral adrenalectomy was performed, via transperitoneal laparoscopic approach in sequential lateral decubitus, with operative time of 130min and <50ml of blood loss. During the procedure, the expected severe hemodynamic variation due to adrenal manipulation and removal was managed accordingly. The procedure was otherwise uneventful. Postoperative period was without incidents and predefined progressive hormonal replacement was performed. Pathology of the specimen confirmed the diagnosis of bilateral pheochromocytoma.

Conclusion: Simultaneous bilateral laparoscopic transperitoneal adrenalectomy is a safe and effective tool in the management of bilateral pheochromocytoma in MEN type IIB cases. Optimal treatment outcomes require a multidisciplinary approach, with thorough preoperative preparation, close cooperation between the surgical and anesthesiology teams during surgery and a close postoperative follow-up.

VID.32

Laparoscopic Management of a Paravesicoprostatic Solid Lesion of Undetermined Etiology

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Introduction and Objective: Over the past years, the use of minimally invasive procedures in Urology has become widespread. In fact, minimally invasive procedures are nowadays considered the standard of care for many urologic diseases. However, due to its rarity and complexity, pelvic lesions of undetermined etiology constitute a diagnostic and therapeutic challenge, usually managed with more traditional approaches.

Materials and Methods: The authors present a video of the laparoscopic management of a paravesicoprostatic solid lesion of undetermined etiology.

Results: A 74 years-old male patient was under regular follow-up for lower urinary tract symptoms due to benign prostatic hyperplasia, treated with dutasteride. Previous medical history included only a bilateral hydrocele repair. Due to progressive worsening of the voiding symptoms, the patient underwent a reevaluation with transrectal prostate ultrasound, revealing a 7cm solid lesion on the pelvic cavity, lateral to the prostate, without apparent contact with the bladder, prostate or seminal vesicles. Further characterization with computed tomography and magnetic resonance imaging confirmed the presence of a heterogenous 7cm left laterovesicoprostatic solid lesion, with regular contour and well-defined limits, without communication with the surrounding structures. Ultrasound-guided transrectal biopsy of the lesion was inconclusive, revealing fragments of fibro-adipose tissue with areas of unspecific inflammatory infiltration. Considering the probable role of the pelvic lesion on the worsening of voiding symptoms, as well as its undetermined malignant potential, the patient opted for surgical treatment. A transperitoneal laparoscopic excision of the mass was performed, with operative time of 120 minutes, <150ml of blood loss and without immediate complications. Postoperative period was uneventful and the patient was discharged 3 days after the procedure. Pathology and imunohystochemistry of the specimen were compatible with a benign inflammatory miofibroblastic tumor. The patient is asymptomatic at one year of follow-up.

Conclusion: In selected cases, laparoscopy can be a safe and effective tool in the management of pelvic lesions of undetermined etiology.

VID.33

Simplified Percutaneous Large Bore Suprapubic Cystostomy for Acute Urinary Retention

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Introduction and Objective: Commercial suprapubic cystostomy trocars are not widely available across low resource economies and as such many suprapubic cystostomy procedures for acute urinary retention that cannot be relieved via urethral catheterization are still done through a formal or a modified open procedure. The vast majority of these patients will carry these catheters for long before definitive surgery hence necessitating large bore catheter insertion.

This video shows a simplified large bore puncture suprapubic cystostomy technique that utilizes selected surgical blades in the place of commercial trocars.

Materials and Methods: Vernier Caliper was used for measurement of the diameter of the various surgical blades towards selecting those that will allow insertion of large Foley catheters (sizes 18 or 20Fr) without

creating a large puncture wound size at same time. The simplified suprapubic cystostomy approach consisted of puncturing the palpably distended bladder with Surgical blade size 20 (7mm diameter) or sizes 21 and 22 (9mm diameter) to allow resistance free insertion of Foley catheter size 18Fr (maximum diameter of 6mm) or size 20 (maximum diameter of 6.7 mm) respectively. Prior to the puncture, application of local anesthesia and successful aspiration of urine was done at a point along the mid abdominal line - 2 finger breadths above the pubic symphysis.

Results: The index patient was a 60 year old male that presented in acute urinary retention and failed urethral catheterization. The percutaneous access into the bladder was achieved used a mounted size 20 surgical blade with subsequent insertion of size 18Fr Foley catheter. The duration of surgery from the time of application of the local anesthesia to insertion and inflation of the balloon of Foley catheter was less than 2min. Suture fixation of the Foley catheter is not required.

Conclusions: In the absence of commercial suprapubic cystotomy trocars, large-bore emergent access to the bladder can be safely achieved through direct puncture of the palpably distended bladder with appropriately selected surgical blades (sizes 20, 21 or 22) that will subsequently allow resistance-free placement of the selected Foley catheters (sizes 18 or 20Fr).

VID.34

Pelvic (Paravesical) Paraganglioma: Technique of Robot Assisted Excision

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Introduction and Objective: Paraganglioma (Paraside by side, ganglioma-benign neoplasm composed of nerve fibers and mature ganglion cells) are the rare tumors arising from peripheral nervous system (i.e. outside brain and spinal cord) also called as extra- adrenal pheochromocytoma. Tumors, arising from chromaffin cells of adrenal gland called pheochromocytoma. Paraganglioma may be functional or non-functional depending upon whether it produces either of adrenalin, nor adrenalin, both or none.

Materials and Methods: Forty four years old hypertensive male, presented with history of poor urinary flow, hesitancy for 2 months. On investigation found to have pelvic mass, abutting left postero lateral wall of Urinary Bladder on left side, no intra luminal component, compressing left lobe of prostate, no invasion seen. Cystoscopy was normal except bulge on the left lateral wall of bladder, Intra cavity ultrasound (ICUSG) confirmed the left paravesical location of tumor, TRUS revealed round mass separate from bladder, prostate and seminal vesicles. He underwent USG guided biopsy of paravesical mass made the diagnosis of Paraganglioma with immunohistochemical markers Chromogranin, Synaptophysin positive. Serum markers of Paraganglioma were normal suggesting its non-functional nature.

Results: We describe technique of robot assisted excision of paravesical Paraganglioma

Conclusion: Location wise, Paragangliomas arise mostly in abdomen, near the aorta or kidney para-vertebrally. Occurrence of tumor at various locations was described as in bladder, pelvis, prostate, ovary and thorax. Symptoms may arise due to its biochemical secretions or due to shear mass effect. Excision of these masses using Robotic platform is feasible and the advantages (high magnification, 3D vision, minimal complications and post op hospital stay) of using robotic platform for operating in deep pelvic cavity can be best utilized in such cases.

VID.35

Laparoscopic Pyelolithotomy in Pelvic Renal Ectopia

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Introduction and Objective: Renal pelvic ectopia is a rare upper urinary tract anomaly (1/2.100-3.000) being the left side slightly more common than the right side. Most cases are asymptomatic and incidentally diagnosed; however, vague abdominal complaints or ureteral colic secondary to an obstructing stone are the most frequent symptoms leading to the diagnosis. Due to their location and either position, pathologies have different approaches to conventional treatment and are challenges. The aim of this video is to demostrate a laparoscopic pyelolithotomy in ectopic pelvic kidney.

Materials and Methods: A 37 years old man diagnosed with a 3 x 3 cm lithiasis in ectopic pelvic kidney underwent laparoscopic pyelolithotomy. Under lithotomy 4 laparoscopic ports were placed as a standard transperitoneal pelvic access being 5 cm more cephalic. Sigmoid colon was medially movilized until renal pelvis was identified to be incised for stone extraction. Double J stent ureteral was percutaneously placed and renal pelvis closed with 4-0 Vicryl.

Results: Surgical time was 60 minutes without perioperatory complicationes. The patient was discharged 36 hs after bladder catheter was removed. Finally, ureteral stent was removed 4 weeks after surgery.

Conclusion: Pathologies in upper urinary tract anomalies are rare and, therefore, challenging. For ectopic pelvic kidney stones laparoscopic pyelolithotomy is feasible with low morbidity compared to open surgery. Ports placement must be adapted to each particular case.

VID.36

A Substitute to the Nephroscope Adapter to the Light Cable

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Introduction and Objectives: We present a video of our experience of to improvise a missing nephroscope light port adaptor using what we have at hand.

Materials and Methods: In the beginning of a percutaneous renal surgery, the nephroscope light port adaptor was missing. We tried the adaptors of all the other scopes available but they were not from the same brand. Thus, no adaptor worked. What is the solution? The light cable do not adapt to the nephroscope. It was not fixed so it slips with every moves of the nephroscope. It is impossible to work like this. The solution: A small piece, which has the length of the light port, is severed from the funnel shaped end of a Foley catheter. Then, it is adapted to the light port.

Results: The light cable fits tightly to the nephroscope light port. It does not slip away with the movements of the nephroscope. Thus, it has stayed fixed throughout the whole procedure. The procedure had continued successfully for more than 90 minutes. We were concerned with the heat and melting of the small piece, thus, it was checked regularly. However, even at the end of the procedure, the small rubber piece has not over heated.

Conclusion: The problem of the missing light adaptor was successfully resolved using a piece of a Foley catheter, which had allowed the completion of the procedure, without over-heating or melting.

VID.37

Robotic Assisted Radical Cystectomy with Simplified Intracorporeal Neobladder: Technical Description and Preliminary Outcomes

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Introduction and Objective: Radical cystectomy is the standard of care for bladder cancer patients. As robotic experience and technique advances, Robotic Assisted Radical Cystectomy (RARC) is being applied. We report the first series of RARC with Intracorporeal Neobladder (INB) in the Middle East using a simplified technique.

Materials and Methods: Using the Da Vinci Si robot in supine position and steep trendelenbourg, a 12mm camera trocar, 3 robotic 8mm and two 12mm left sided assistant ports are placed. The robot is side docked to the patient and a robotic radical cystectomy with extended lymph node dissection is performed. A 40 cm ileal loop is identified 15 cm from the ileocecal valve. Urethro-ileal anastomosis is performed with Vanvelthoven technique. Using Endo GIA 60mm Bowel resection and anastomosis are done after measuring 20 cm of bowel in each limb. The bowel segments are divided leaving 4 cms chimneys on each side. The posterior then anterior neobladder walls are sutured. Uretero ileal anastomosis is performed using 5-0 PDS sutures over DJ stents. A 24 Fr foley and a 18 Fr suprapubic catheters are placed.

Results: From January 2014 till February 2017, 6 RARC+INB cases (5 males, 1 female) were performed. Mean age was 62 years (51-70). Indications were MIBC in 3 patients and T1 High grade with aggressive features in 3 patients. There was no conversion to open surgery. Mean operative time was 488 min (390-720). Mean EBL was 620 mL with one patient requiring transfusion. Mean hospital stay was 9 days (6-12). All pathologies reported negative margins, negative lymph nodes with on average 21 nodes. There were no major complications; two patients had

UTI requiring antibiotic treatment (Clavien I). Ureteral stents were removed 2 weeks postoperatively. With a median follow up of 15.4 months, 3 patients (50%) regained continence and 2 patients reported erections with PDE5i. All patients were disease free.

Conclusion: In the first reported case series in the Middle east of RARC with simplified INB, this approach was found to be safe and feasible. This minimally invasive technique allows fast recovery with low complications rates and good oncological and functional outcomes in selected cases.

VID.38

A Foley Valve for Connecting a Ureteral Catheter to Drainage Bag

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Introduction and Objectives: We have described economic tricks to adapt the ureteral catheter to a drainage bag, the technique of the ureteral catheter introduction in the funnel shaped Foley catheter distal end, and the technique of the serum bag injection port. We present a video of another economic trick to adapt the ureteral catheter to a drainage bag using the Foley valve.

Materials and Methods: In the end of a PCNL procedure, the colored sleeve around the Foley valve is removed. Then, the soft rubber valve of the Foley nephrostomy catheter is extracted. The ureteral catheter is introduced into the large part of the valve. Thus, the tapered part of the valve is distal. The tubing of the drainage bag is adapted over the tapered rubber valve in a tight junction.

Results: The soft rubber valve of the Foley catheter has adapted, tightly and quickly, the ureteral catheter to the drainage bag. The junction is watertight. Moreover, there is economy of the adaptor.

Conclusion: The use of the soft Foley valve is another trick that eliminates time-consuming and expensive steps in adapting the ureteral catheters to a drainage bag.

VID.39

Robotic Assisted Ureteric Reinforcement with Inlay Plus Onlay Buccal Mucosal Graft for Short Fibrotic Ureteric Stricture: A Point of Technique

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Introduction and Objective: Long segment or short fibrotic strictures in upper or middle 3rd of ureter, not amenable for end-to-end ureterostomy are difficult to manage. Management options like renal auto transplantation or bowel interposition are morbid. In 1999, Naude described buccal mucosal graft wrapped in omentum for ureteric stricture. Subsequently many articles were published using buccal mucosa as patch graft or tubularized graft for ureteric reconstruction. Here we present a video as point of technique for ureteric reinforcement with Buccal mucosal graft (BMG) inlay plus onlay patch for short dense ureteric stricture.

Materials and Methods: Sixty year diabetic female with inflammatory right midureteric stricture had failed endoscopic management with S.creatinine of 1.84 mg%. Antegrade-retrograde dye study was suggestive of 2.5-3 cm stricture at upper SI joint. Intraoperatively strictured ureter was found densely adhered to iliac artery. Stricture was incised, part of harvested BMG was kept as inlay graft over posterior strictured ureteric wall and rest was sutured with vicryl 4.0 with the margin of ureterotomy as onlay graft over 6/26 DJ stent with omental wrapping.

Results: Total operative time was 4 hours. Creatinine decreased down to 1.6 mg% with only 1 gm% drop of Haemoglobin. PUC and PCN were removed on 2nd POD and drain was removed on 3rd POD. Pt was discharged on 4th POD. Long term follow up is awaited.

Conclusion: Inlay + onlay grafting has theoretical advantage over tubularized graft or patch graft that almost entire strictured ureter is replaced with buccal mucosa without risk of compromised vascularity.

VID.40

Laparoscopic Transmesocolic Pyelolithotomy for a Child with Horseshoe Kidney

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Introduction and Objectives: Laparoscopic pyelolithotomy has been introduced for horseshoe kidney; however, we did not find any report for transmesocolic approach in this anomaly.

Materials and Methods: An 8-year-old boy referred to our clinic with a 22 mm renal pelvic stone. The patient was not suitable for PCNL because the spleen and the colon were overlying the upper and lower pole of the horseshoe kidney. Therefore, we decided to perform laparoscopic pyelolithotomy. The operation was performed in the flank position with three working ports; two in the lower and upper midline and one in the lateral.

Results: The stone was removed completely and the postoperative period was uneventful.

Conclusion: Transmesocolic approach is safe for the horseshoe kidney and is associated with lesser tissue dissection and faster operation.

VID.41

Surgical Technique for Penile Prosthesis Implantation (PPI) plus Corporeal Reconstruction with Collagen-Fleece Grafting in the Treatment of Peyronie's Disease (PD) with or without Erectile Dysfunction (ED)

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Introduction and Objective: Our objective is to present our initial experience and preliminary results of partial plaque incision and grafting with self-adhesive film containing collagen combined with PPI (inflatable or malleable) in the treatment of Peyronie's disease. We present in video the technique for the implantation of inflatable and malleable prosthesis.

Materials and Methods: Between January 2015 and February 2017, we operated 19 patients using this technique, ten by implantation of a malleable prosthesis and the other nine with inflatable. Nine of them kept proper erectile function and six had significant shortening of the penis without curvature. Six of them had been previously operated: one inflatable prosthesis + modeling; and other with sequelae after simple plication. The mean presurgical PDQ bother score was 9.4 (6-12). As we explain in this video, surgery was performed in the case of malleable through a single incision (with penile degloving) while IPP was performed either by 2 incisions (scrotal + penile degloving) or through a single incision (Kulkarni approach). Curvature correction was made by partial plaque incision with an H modified technique in the area of maximum curvature (or corporeal relaxing incisions) and placing a patch without suturing, covering prosthetic material.

Results: The mean operative time was 74 (55-92) min. The mean postsurgical penile lengthening was 4.3 (2-6) cm. There was an improvement in PDQ PD bother score of 4.3 (2-5) points. No patients had glans ischemia or any infectious complications, but we observed hematoma in 37% (7/19) with no need of surgical drainage. All patients showed good capability of penetration and correction of the penile curvature (<15º of residual curvature) 3 months after surgery. Ten patients had glans hypoestesia at this time, while after the first three months, only four of them remains symptomatic. The overall satisfaction rate was of 90%.

Conclusion: In our experience, plaque incision and collagen fleece grafting during penile prosthesis implantation seems to be a safe and reproducible technique that yields higher satisfaction rates and greater penile lengthening than prosthesis implantation alone. Also, this technique could be consider in the management of sequalae after PD surgery.

VID.42

Membranous Urethrolysis and Dorsal Onlay Buccal Mucosal Graft Urethroplasty for Membranous Stricture Repair

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Introduction and Objectives: Utethral stricture on the membranous portion of the urethra is usually treated with excision and primary anastomotic urethroplasty. We evaluate the feasibility to perform membranous urethrolysis and dorsal buccal mucosal graft urethroplasty in patients with membranous stricture with severe fibrosis after transurethral resection of the prostate and repeated endoscopic procedures.

Materials and Methods: We present the case of a 65 male treated with multiple transurethral resection of bladder papillary tumor and prostate who developed a 2-3 centimeter stricture on membranous urethra with extensive fibrosis and severe oclusion of the lu-

men making urethroscopy impossible. We perform membranous urethrolysis and dorsal onlay urethroplasty, thus preventing external sphincter damage and avoiding urethral shortening.

Results: Bulbo-spongiosus muscle is separated and displaced laterally in a Spanish hand fan-like fashion that allows a direct access to the intercrural and pre-sphincteric space. Double traction of bulbar urethra and bulb of penis facilitates dissection of the membranous urethra and preservation of the sphincter. Once peripheral fibrosis is disected and the membranous portion of the urethra is adecuately exposed, the bulbomembranous junction is cut opened dorsaly and a Beniqué sound inserted in the lumen. This maneuver facilitates completion of the urethrolysis and better exposure of the membranous pre-sphincteric area. An 18F silicon Foley catheter is placed and the total length of the urethrotomy is measured to fit a bucal mucosa graft that has been simultaneously harvested and prepared. Dorsal onlay is completed and the grafted area is attached to the crus of penis and trapezoid space of the prostate. Surgery ends with re-aproximation of bulbospongiosus muscles. Continence and potency are preserved, and ejaculation is restored. Cystography 4 weeks after surgery revealed absence of stricture and cystoscopy performed some months later shows a healed normal membranous urethra without stricture and with a normal sphincter.

Conclusion: The repair of membranous urethral stricture using urethrolysis and dorsal onlay buccal mucosal graft urethroplasty represents a viable alternative for patients with nontraumatic membranous stricture due to repeated endoscopic procedures. Urethral shortening is avoided with this approach and continence is less menaced than with membranous urethral excision and primary anastomotic urethroplasty.

VID.43

Buccal Mucosal Graft Repair of Post Traumatic Female Urethral Stricture and Fistula

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Introduction and Objective: Buccal mucosa is readily available and easy to harvest and can be used in complex urethral reconstruction. This video demonstrates the repair of a complicated post traumatic female urethra stricture with recurrent proximal urethral fistula.

Materials and Methods: This video is a case report of the use of a buccal mucosal graft for complicated urethral reconstruction.

Results: A 15 year old female suffered blunt trauma from brick wall falling on her with pelvic fracture and vaginal fistula. She had the fistula repaired and then returned 5 years later with urethral stenosis and recurrent proximal urethral fistula. We demonstrate our surgical technique of buccal mucosal graft ventral onlay repair of this difficult problem.

Conclusion: Buccal mucosa is readily available, easy to harvest with a concealed donor site, and should be considered an important tool for complex urethral reconstructive procedures.

VID.44

Ex Vivo Repair and Autotransplantation for Complex Renal Artery Aneurysms

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Introduction and Objective: We present the surgical approach for the treatment of complex renal artery aneurysms. A vascular expert formally excludes the possibility of an endovascular treatment. The surgical approach is validated after multidisciplinary consensus due to the complexity of the intra-hilar morphology and the risk of spontaneous rupture. Both vascular and urologic surgeons perform the renal autotransplantation after ex vivo repair.

Materials and Methods: Four patients between the ages of 52 and 65 were included in the study during the inclusion period from June 2015 to June 2016. The surgical approach consisted of 4 steps: 1- Removal of the kidney (by lumbotomy for the right one and laparoscopy for the left one) following the same protocol of a live donor. 2- Removal of the saphenous vein graft. 3- Preparation of the kidney on the back table; the aneurysm and its arterial branches were dissected and resected, then the distal intra-hilar branches were implanted on the saphenous graft (1 to 3 grafts). 4- Renal transplantation was performed under intravenous heparin on the homolateral external or common iliac vessels.

Results: All transplantations could be performed. Mean surgery time was 420 minutes (390 - 450), and no complication was noted during the procedure. Doppler ultrasound control at the first day after surgery showed good result. One patient had, on an injected CT scan performed at day 7 after the procedure, an ischemia of 60% of the grafted kidney, due to thrombosis of arterial branches implanted on a single saphenous vein graft, and managed by a medical treatment only. The other patients did not show any abnormality of the kidney perfusion or function on an initial CT scan and on an MRI performed at 3 months after the surgery. No other complications were noted. There was no change in the post-operative kidney function after 3 months of follow up.

Conclusion: Renal auto-transplantation after ex vivo treatment is a surgical option for complex renal artery aneurysms. The double team approach and the good experience in renal transplantation from a live donor are fundamental to the success of this rare and complex surgical procedure.

VID.45

Futuroplasty: Endoscopic Liquid BMG Insertion for Urethral Strictures

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Introduction and Objectives: A minimally-invasive endoscopic approach, using a liquid buccal mucosal graft (LBMG), for management of urethral stricture has recently been published as a proof-of-concept in an animal model (PMID 27177425). We present for the first time our experience of using a LBMG technique in human patients with bulbar urethral stricture.

Materials and Methods: A prospective clinical trial was undertaken after ethics approval and appropriate patient consent. Patients with a single short urethral stricture who failed at least one endoscopic urethrotomy were included. Failure was defined as need for further interventions or recurrence of symptoms. Preoperative workup included history, examination, RGU, VCUG, urine culture and renal function tests. Steps of procedure: the stricture is evaluated endoscopically, a glide wire placed and an urethrotomy performed at 6 o'clock position with cold knife. A 14 Fr urinary catheter is placed for bladder drainage. 2 x 1 cm buccal mucosa graft (BMG) is harvested. The BMG is washed in an antibiotic solution, then sharply minced to <1mm fragments and centrifuged at 3500 rpm for 5 minutes. The resultant pellet is re-suspended in dilute components of fibrin glue and injected via a 10 Fr feeding tube alongside the urinary catheter. The injection of LBMG was performed under direct view through a 6 Fr ureterosope placed alongside the catheter. The urinary catheter is removed 7 days postoperatively. Follow up uroflow and post-void residuals were measured every 3 months.

Results: Table 1.

Conclusion: Endoscopic LBMG urethroplasty is a feasible procedure with a promising role in future treatment of short anterior urethral strictures. Larger cohort and longer follow up are planned to determine durability of this procedure.

VID.45, Table 1.

Number	Prior Reconstruction	Stricture site	Follow up	Outcome
1	Panurethral stricture – Kulkarni urethroplasty	Proximal anastomotic	6 months	Success
2	Primary stricture	Mid bulbar	5 months	Success
5	Bulbar urethral stricture – Failed Urethroplasty	Proximal anastomotic	3 months	Success

VID.46

Left Nephrectomy in Living Donor Vascular Dissection (Open Surgery)

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Introduction and Objective: Describe our technique of vascular dissection and control during the open living donor nephrectomy. We insist on the vascular

dissection which must guarantee a maximum length of the vessels of the graft.

Materials and Methods: Our vascular dissection involves the following steps: 1) Control of the renal vein starting with its collateral: genital vein, adrenal vein and sometimes the lumbar azygos vein; 2) Dissection of the renal vein as far as possible from the hilum and as close as possible to the vena cava; 3) Dissection of the renal artery until its ostium at the level of the aorta; 4) the clamping-section of the pedicle then the suture of the vascular slices with control of the hemostasis.

Results: The vascular times shown in our film are hardly visible to learners who are not dressed and in front of the main operator. Our technique is a set of simple and precise gestures, it seems simple, sure and reproducible and requires only basic means.

Conclusion: Vascular dissection during nephrectomy in the living donor is an essential element on which the quality of the graft depends. The technique described in our film seems simple safe and reproducible in non-equipped centers or n having no experience and or means of minimally invasive pathway.

VID.47

On the Spot Improvised Basket for PCNL

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Introduction and Objectives: We present a video of how a difficult situation was resolved by on the spot improvisation of a basket to extract a lateral stone, during percutaneous renal surgery.

Materials and Methods: During percutaneous renal surgery for a complete stag-horn stone through a central calyx access, after pelvis clearance, the nephroscope is advanced into the upper calyx. There is a stone in a lateral calyx, which cannot be reached with rigid forceps. The movements of the nephroscope are limited; it is in its utmost position. It cannot move more laterally to have the stone centered. A Nitinol basket is not available. The stone could have been removed using the flexible nephroscope. Otherwise, it could have been pushed with the needle-PCNL or the rigid ureteroscope, through a new upper percutaneous access. Improvisation of a Nitinol basket: The floppy tip of a standard hydrophilic guidewire is looped twice, forming a 3 cm diameter loop. The proximal end of the loops and the body of the guidewire are tied securely with ligature. The distal ends of the loops are placed crosswise. They are fixed in this position with a first knot. Then, the thread is passed between the loops perpendicular to the first knot then it is tied. This bulky basket will be difficult to pass through the nephroscope operating channel. Thus, the guidewire tail is back-loaded into the operating channel of the nephroscope until the proximal knot is introduced into the operating channel. Since this basket will be difficult to move through the nephroscope, the whole complex nephroscope-basket is moved as one in order to maneuver and catch the stone. After introduction through the Amplatz sheath, and into the calyx, the basket is moved around until the stone is caught and attracted through the Amplatz sheath.

Results: This on the spot improvised Nitinol basket was easy and quick to make. It was effective to mobilize and extract the stone.

Conclusion: This trick or idea to improvise an on the spot handmade basket had allowed to solve an intraoperative problem or complication. To overcome different situations during percutaneous renal surgery a spirit of innovation can be helpful.

VID.48

Percutaneous Tract Dilation beside the Guidewire

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Introduction and Objectives: There are new ureteral access sheaths that allow transforming the working guidewire into a safety guidewire. The guidewire is passed only in the first 3 or 4 centimeters of the dilator, which has a lateral slit. When the dilator is retrieved, the guidewire is released from the dilator through the lateral slit, and stays outside the access sheath. Thus, there is an economy of a guide wire. We present a video of our experience of percutaneous tract dilation parallel or beside to the guidewire, using the same principle. The working guidewire becomes safety guidewire outside the Amplatz sheath at the end of the dilation.

Materials and Methods: Between February 2016 and February 2017, 27 PCNL have been performed with dilation of the tract beside the guidewire. Operative technique: After calyx puncture, a guidewire is inserted down the ureter or it is coiled in an opposite calyx. A pre-dilation to 12 Fr is performed. A stiff 8 Fr ureteral catheter or Double-J-stent pusher is used. The Amplatz catheter can also be used. Its tip is held with a forceps. With a "lancet" blade scalpel, beginning from the tip, a 4-5 cm longitudinal slit is performed in one side of the catheter. At the end of the slit, the scalpel is turned on its self to perform a small hole to accommodate the guidewire. It will be the egress point of the guidewire. The catheter is bent just after the slit. Thus, the small hole will be in the apex of the bend. The tail of the guidewire is inserted into the slit tip of the catheter. After transiting in the 4 cm of the catheter with the slit, the guidewire will egress through the hole, in the summit of the bend. The catheter is advanced over the guidewire until reaching the calyceal cavity. "One shot" or "one step" dilation is performed over the catheter with a 24 Fr Amplatz dilator and sheath. The long part of the catheter, Amplatz dilator and sheath are beside the working guidewire. When the Amplatz sheath reaches the calyx, the catheter is attracted and the guidwire is released from the first part of the catheter through the slit. Thus, the working guidewire become safety guidewire outside the Amplatz sheath.

Results: Twenty seven patients had PCNL with dilation with this technique, 14 males and 13 females. The mean age was 39 (21-56). Thirteen right kidneys and 14 left. The main stone burden was 48 mm (32-56). The dilation beside the guidewire was possible in most cases. In 1 case there was peri-renal fibrosis and it was not possible to introduce the Double-J Pusher, which is not tapered. Operative time was 70 min (45-95). The tract dilation time was 4.5 min (3.5-7). The haemoglobin drop was 0.81 (0.5-1.8). There was no complication noted during this dilation.

Conclusion: The dilation beside the guidewire is possible safe and feasible in this small series. It allows the economy of a guidewire. However, the catheter has to be very stiff to allow having a straight path to guide the dilator into the calyx. However, more studies are necessary to develop the technique.

VID.49

Tips and Tricks to Have a Clear Visibility during Percutaneous Renal Surgery

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Introduction and Objectives: During percutaneous renal surgery, large outflow of irrigating fluid, may lead to retraction of the pelvi-calyceal system, reduced visibility, and difficult exploration. We present our solutions to this problem, by using our department's tips and tricks to increase the irrigant flow or to decrease the outflow or both.

Materials and Methods: During percutaneous nephroscopy, irrigation flow can be increased using manual pressure by twisting the irrigant bag. Besides, an extra irrigation may be installed via the nephroscope drainage port. In addition, both techniques might be associated. Otherwise, to block the irrigant outflow, the junction between the Amplatz sheath and nephroscope is closed by a watertight grasp with the left hand. Alternatively, the rubber seal of the nephroscope can be adapted to the 30 Fr sheath. Thus, it is useful with a rigid or flexible nephroscope. If the nephroscope rubber seal is worn-out, with large fluid outflow, and there is no spare change, a piece from the rubber piston head of a 20 ml syringe can be used to patch up the gap in the rubber seal. Otherwise, the whole rubber piston head (10 ml Syring for smaller nephroscope or Amplatz sheath) can be used as the neaphroscope seal.

Results: These techniques allow an improved visibility and distension of the pyelo-caliceal system for a better inspection, thus a successful outcome of the percutaneous renal surgery. Techniques to increase the irrigation flow are a low-pressure system with less risk of complications. Techniques blocking the irrigation outflow lead to intra-renal high pressure with risk of large extravasations and fluid absorption. They have to be used for very short periods. The use of the rubber piston head of a 20 ml, to patch or to replace the nephroscope seal, is a cheap and helpful alternative.

Conclusion: These techniques are helpful to have a clear visibility in difficult situations. They might be an alternative to pressure bag and automated pressure

device; however, they must be used with caution to avoid complications.

VID.50

The Complete Guide to a Simplified Percutaneous Calyx Puncture without Rotating the C-Arm

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Introduction and Objectives: Mostly, during fluoroscopic percutaneous calyx puncture, the progression of the needle penetration has to be monitored with 2 planes at 0° and 30°, by rotating the C-arm. We present a video of step-by-step description of our technique of percutaneous fluoroscopic calyx puncture without rotating the C-arm, in the split-leg modified lateral position.

Materials and Methods: In our routine percutaneous renal surgery, fluoroscopic calyx puncture is performed without moving the C-arm. The patients are placed in the split-leg modified lateral position. Percutaneous access is performed under fluoroscopic guidance, with the X-ray beam perpendicular to the tract. The C-arm is placed in a fixed position between 10° to 15°. This position of the C-arm allows monitoring the needle in both the cephalo-caudal and latero-medial movements; the needle has to be aligned with the targeted calyx during the whole puncture. To find the kidney's lateral edge and the calyx, in the antero-posterior plane, the needle is displaced, from posterior to anterior by small increment positions. Meanwhile, a slight jiggle of the needle is performed. To avoid parenchymal injuries, the tip of needle must be outside the renal parenchyma. It stays 1.5 to 2 cm outside the calyx. When the needle pushes the kidney and the calyx is indented, it is the correct anterio-posterior position. Then, the needle is advanced through parenchyma and just few millimeters into the calyx.

Results: This technique of calyx puncture without moving the C-arm is feasible. It is the only technique used in our department since 1997, for more than 1000 percutaneous surgeries. We think that it is easy and quick to perform compared to puncture with moving the C-arm. In addition, in our experience this technique is easier to teach and to explain, thus many urologists had mastered the calyx puncture. Therefore, it had helped the spread of percutaneous renal surgery to more than 10 centers. This technique, has been used also in the prone position, the needle is moved from up to down until the kidney moves. We think that it can be used also in the supine or supine modified position.

Conclusions: This technique of calyx puncture without moving the C-arm is feasible. We think that it can be easily performed. In addition, in our experience this technique is easier to teach and to explain, thus many urologists had mastered the calyx puncture and percutaneous renal surgery.

VID.51

Percutaneous Second Look Reentry under Endoscopic Vision without Fluoroscopy

Lezrek M[1,2], Tazi H[2], El Yazami O[2], Bazine K[1], Slimani A[1], Kassmaoui EH[1], Beddouch A[1], Alami M[1], Ammani A[1]

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Introduction and Objective: We present a video of our experience or percutanous reentry during second session Percutaneous renal surgery under endoscopic vision, without fluoroscopy.

Materials and Methods: The procedure is performed when there are residual stones after a first session of percutaneous renal surgery, which can be treated by a second PCNL session. Under general or spinal anesthesia, the patient is placed in the split-leg modified lateral position. The skin and nephrostomy catheter are disinfected, and betadine soaked gauze are left around the nephrostomy catheter for at least 15 minutes. Under fluoroscopic guidance, a guidewire is inserted through the nephrostomy catheter and it is coiled in the renal pelvis or passed down the ureter. The nephrostomy catheter is removed. A 24F Amplatz sheath is back-loaded over the 24F nephroscope. Under endoscopic vision, the nephroscope is advanced through the percutaneous tract beside the guidewire, until reaching the caliceal cavities. Then, the Amplatz sheath is advanced over the nephroscope to the kidney. The guidewire is left outside the Amplatz sheath.

Results: From January 2012 to May 2016, 16 patients had a second look-PCNL. The reentry under endoscopic vision was possible in all cases in a few minutes time. Save in one case in which the second look was scheduled after 3 weeks, with 18Fr nephrostomy catheter, because of pus retention, the 21F nephroscope had reached the collecting system, however the introduction of the 24F Amplatz sheath was difficult. Therefore, dilation of the tract was performed with the 24F Amplatz dilator. In all cases no complication was noted, no hemorrhage, and no extravasations.

Conclusion: This technique of percutaneous reentry under endoscopic vision is a possible, quick and safe technique.

VID.52

High Volume Vesical Lithiasis – Better Treated by Suprapubic Approach?

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Introduction and Objectives: The classical approach for the treatment of urinary lithiasis is endoscopic. This technique has the advantage of simultaneously allowing the treatment of urinary infravesical obstruction but it is associated with important urethral instrumentation. Percutaneous cystolithotomy has emerged as an alternative treatment of this pathology. This technique allows faster fragmentation and extraction of stones without substantial instrumentation of the urethra. The purpose os this work is to present an illustrative video of a percutaneous cystolithotomy technique and a series of cases of patients undergoing this procedure.

Materials and Methods: We have created an illustrative video of percutaneous cystolithotomy, step by step, and carried out a retrospective analysis of 15 patients who underwent this procedure.

Results: We present a series of 15 consecutive cases of patients undergoing percutaneous cystolithotomy. The average size of intravesical stones was 4.5cm and the average time of surgery was 78-minute. There were three cases of post-surgical complications Clavien grade 1. The average duration of hospitalization was 1.5 days. All patients were no residual lithiasis after the procedure. A demonstrative video of the technique used in our institution was presented.

Conclusion: Percutaneous cystolithotomy can be used safely and shown to be a good alternative to endoscopic treatment. The potentials advantages of this procedure over the endoscopic procedure are shorter time of surgery and minor instrumentation of the urethra and therefore less urethral injuries. Thus, in our experience, percutaneous cystolithotomy can be considered one of the best forms of treatment of bladder large volume lithiasis.

VID.53

Percutaneous Tract Renal Parenchyma Tunnel Cauterization

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Introduction and Objectives: We present a video of our experience of endoscopic cauterization of the percutaneous parenchyma tunnel using a ureteral catheter with its metallic stylet.

Materials and Methods: A 40-years-old female patient presented a right uretero-pelvic junction obstruction is programmed for percutaneous endopyeloplasty. Under general anesthesia, the patient is placed in our standard position, the Split-leg modified lateral position. A 28 Amplatz sheath percutaneous access is performed through a middle calyx. Endoscopic vision is not perfect secondary to a mild bleeding. Exploration of the parenchyma tunnel finds an active bleeding, which could be tamponed by the Amplatz sheath. However, it was a shallow calyx and when the Amplatz sheath is over advanced, it impede endopyelotomy. Thus, cauterization of the parenchyma is decided. A proper endoscopic electrode is not available. A ureteral catheter with its steel mandarin stylet is used as an electrode. Few millimeters of the ureteral catheter are cut to expose the tip of the stylet. The current is passed in the electrode by connecting the stylet with the electrode of the pencil handle of the electro-cautery unit. Otherwise, the connection can be fixed by a mosquito clamp. A metallic stylet with a large brass tip is used for cauterization. The ureteral catheter is introduced through the nephroscope.

The tip of the Amplatz sheath is retracted just outside the parenchyma tunnel. The cauterization current is passed through the stylet and the tunnel is cauterized.

Results: The electric cauterization of the percutaneous parenchyma tunnel was possible in few minutes. The endoscopic view has improved and became clear, which had allowed continuing the procedure and endopyeloplasty to be performed. Control of the parenchyma tunnel at the end of the procedure showed a perfect hemostasis.

Conclusion: Electric cauterization of the percutaneous parenchyma tunnel was successful using a ureteral catheter with its metallic stylet. It had allowed continuing the procedure. Will it be effective on large bleeding? More experience and studies are needed.

VID.54

Stone Mobilisation from Inaccessible Calyx to the Renal Pelvis with the Nephroscope's Tip

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Introduction and Objectives: This video illustrates a technique that was used since the first era of PCNL, we present a video of our experience of pulling out calyx stone plugs with the tip of the nephroscope, after clearance of the renal pelvis in complex and staghorn calculi.

Materials and Methods: A 45-years-old male with a history of open surgery for a left renal stone 8 years ago, has a complex stone of the lower pole of the right kidney. Under general anesthesia, the patient is placed in our standard position, the Split-leg modified lateral position. A percutaneous renal tract is performed through the lower calyx with a 24 Fr Amplatz sheath. The procedure is performed using a 21 Fr nephroscope. After clearance, of most of the lower pole, 2 branches of the stone were in lateral calyxes, which cannot be easily reached with the rigid nephroscope. The tip of the nephroscope grips the protruding part of the stone and progressively pushes the stone from the calyx to the renal pelvis, till the whole stone plug is pulled out. Otherwise, a tri-prong forceps might be used to grasp the stone, then the forceps is pushed forward into the renal pelvis pulling out the stone.

Results: The technique to pull out the stone plug from the calyx is one of the main techniques, to extract stones, which are plugging unreachable calyxes, using the rigid nephroscope. In this patient, this technique had allowed to remove all the kidney stones with the rigid nephroscope through a single access. There is the concern of mucosal or pelvic wall injury by the tip of the nephroscope. Thus, this maneuver has to be performed with precision and smoothness. However, for this technique to be effective, during fragmentation of the pelvic stone, a protuberance has to be left in continuance of the stone infundibulum prolongation. If there is no stone protuberance the calyx stone plug will retract into the infundibulum, with no griping point for the nephroscope's tip.

Conclusion: The tip of the nephroscope can be used to pull out calyx stone plugs allowing to remove all stones or to reduce the number of percutaneous accesses and ancillary procedure in complex and staghorn calculi.

VID.55

Back Loading a Guidewire on a Rapid Release Ureteral Access Sheath without the Back-Loading Clip

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Introduction and Objectives: The rapid release ureteral access sheath is a good way to transform the working wire to a safety. The guide is passed in a split of the first 3 or 4 centimeters of the dilator. When the dilator is retrieved the guide is outside the sheath. Thus, there is an economy of a guide wire. Sometimes there is difficulty, to backload the guide even with the back-loading clip. We present a video of how to backload the guidewire into the sheath without the clip.

Materials and Methods: To backload the guidewire through the rapid release access sheath without the back-loading clip, the tapered dilator is curved. The egress hole will be in the apex of the curve. Thus, the guidewire exits the dilator by the hole.

Results: The trick to bend the dilator such as the egress hole will be in the apex of the bend has allowed to backload the guidewire through the ureteral access sheath and through the egress hole, without the back-loading clip. Always, the guide wire exits the dilator smoothly and quickly, whether it is the stiff or floppy tip of the guide wire, without any difference.

Conclusion: This technique has simplified the procedure of the ureteral access sheath insertion.

VID.56

Endoscopic Treatment of Intrarrenal Stenosis and Lithiasis with Flexible Videoureterorenoscopy

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Introduction and Objectives: Renal stenosis can be congenital (caliceal diverticulum) or acquired (e.g., post renal surgery). They cause urinary stasis and stones is a consequence (9.5-50%). Clinical manifestation may be pain, haematuria and urinary tract infections. Treatment of stones in this situation is challenging. Options include: open, laparoscopic surgery or minimally invasive approaches such as extracorporeal shockwave lithotripsy (SWL), percutaneous nephrolithotomy (PNL), and flexible videoureterorenoscopy (f-URS). The aim of the video is to demonstrate endoscopic treatment of renal stenosis with lithiasis in two patients using flexible videoureterorenoscopy.

Materials and Methods: The video demonstrate two patients, a 58 years old woman (case 1) who present with flank pain and urinary tract infection. The computerized tomography (TC) shows a 10mm lithiasis withing a right, superior calix diverticula with severe dilated superior pole. The other patient (case 2) is a 54 years old women with a previous PNL for a 4cm staghorn calculi three year ago. She actually has two residual stones (1 cm and 1.2 cm) in the left upper calix without success with SWL. Both patients underwent flexible videoureterorenoscopy at our institution. Flexible ureterorenoscopy (digital STORZ flex C2) was performed with standard technique using a 10-12 access sheath. Incision of the stenosis was done in case 1 with a 230Mm holmium laser fiber until the scope could access the cavity. Dusting of the stone was done with a 12 Hz and 5 J set. In both cases we left a double J stent in the calix just drained.

Results: Surgical times were 60 and 82 minutes respectively. No perioperative complications were reported and hospital stay was 8 hours. Ureteral stents were retired two weeks after procedure. No evidence of stones was demonstrated in ultrasonography and TC at 2 months after procedure (100% Stone free).

Conclusion: Flexible ureterorenoscopy is an effective and safety procedure in complex stones associated to renal stenosis.

VID.57

Bilateral and Simultaneous Minipercutaneous Nephrolithotomy in an 11 Months-Old Infant with Bilateral Large Renal Calculi

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Introduction and Objective: Although extracorporeal lithotripsy (SWL) has been considered the gold standard treatment for the upper urinary tract lithiasis in children, indications of percutaneous nephrolithotomy (PNL) is recently increasing. The goal of our current research is to show the result of a bilateral and simultaneous minipercutaneous procedure in an 11 months child with acute renal failure due to bilateral staghorn calculi.

Materials and Methods: Our work is based on an 11 months and 5'5 kg of weigh child who came to the Pediatric emergencies with vomits, irritability and mild haematuria. Blood test, urine culture and metabolic parameters were measured. Renal and bladder ultrasonography were performed. Bilateral and simultaneous minipercutaneous nephrolithotomy were carried out, using 18Fr. working sheath (Cook Medical) and high pulse Ho.YAG laser (Lumenis 100W).

Results: Two nephrostomies tubes were inserted because of acute renal failure and dilatation of both renal units. Minipercutaneous procedure was carried out and laser lithotripsy of both bilateral staghorn calculi. Flexible ureteroscopy with digital Störz ureteroscope was necessary in both procedures. Stone clearance was > 80% with residual fragments in right lower pole. No complications were observed and patient was discharged – 6 days after MiniPCNL. Stone composition was monohydrated calcium oxalate.

Conclusion: Bilateral and simultaneous minipercutaneous procedure has been a safe and effective alternative to manage bilateral staghorn calculi in an 11 months child. Advances in PCNL techniques and minuariturization of instruments have led to an in-

crease in its use to manage large renal calculi in children.

VID.58

Training Magic Box for Flexible Ureteroscope

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Introduction and Objective: The introduction of endourology in Maghreb in particular for the management of urolithiasis, a pathology fatal to renal function, has led to the acquisition of endourological means, mainly the flexible ureteroscope whose mastery requires training beforehand.

Materials and Methods: The acquisition of simulators for ureteroscopy is very difficult in because of its cost, so we have made a very basic "simulator" from a simple packaging for household appliances, a pair of gloves, rubber bands, two tubes and some stone.

Results: The very practical and easy manipulation on this type of basic model allows the beginners all the possible manipulations: introduction of the flexible ureteroscope, exploration of cavity calyxes, laser fragmentation and extraction of calculi.

Conclusions: The "Simulator" -at insignificant cost- provides young urologists an original way of training that will enable them to adapt to future real situations in laser ureteroscopy.

VID.59

A Urinary Diversion Technique Using Retubularized Bowel Harvested from Prior Augmentation Cystoplasty

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Introduction and Objectives: We describe a technique to produce a urinary conduit by harvesting and retubularizing a bowel segment previously used to perform augmentation cystoplasty.

Materials and Methods: This procedure has been performed in two patients. Surgical time, estimated blood loss, hospital stay, return of bowel function and post-operative complications are reported as short-term results. Change in renal function and radiographic findings are reported as intermediate-term outcomes.

Results: One patient had a prior sigmoid colon augmentation cystoplasty and one patient had a ileal augmentation cystoplasty. The operative times were 360 minutes and 390 minutes respectively. Both patients underwent supratrigonal cystectomy. Estimated blood loss was 350 cc in the first case and 300 cc in the second. The first patient had a return of bowel function in 2 days and a total hospital stay of 2 days. The second patient had return of bowel function in 2 days and a hospital stay of 3 days. There were no post-operative complications in the first patient while the second patient had a persistent fluid collection requiring parenteral antibiotics, percutaneous drainage and readmission. The first patient has no hydronephrosis, stable eGFR (>90) and bilateral reflux on loogram at 1 year follow up. The second patient has no hydronephrosis on CT imaging and stable eGFR (>90) at 6 months follow up.

Conclusion: In this initial experience, a segment of bowel harvested from an augmentation cystoplasty was retubularized to create a urinary conduit. This technique allowed keeping GI system in continuity, thus avoiding inherent risks associated with additional bowel harvest and re-anastomosis. A larger series and longer follow up will determine the reliability of this technique.

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UP.001

The Association between Androgenic Hormone Levels and the Risk of Developing Coronary Artery Disease (CAD)

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Introduction and Objective: The aim of the study was to evaluate the relationship between the serum levels of androgens and Coro-nary Artery Disease (CAD) in an Iranian population.

Materials and Methods: Male individuals admitted to Tehran Heart Center and Sina Hospital, Tehran, Iran from 2011-2012 were categorized into CAD and control groups based on selective coronary angiography. Baseline demographic data, including age, BMI, diabetes, and a history of hypertension were recorded. Patients were also assessed for their serum levels of total testosterone, free testosterone, estradiol, dehydroepi and rosterone sulfate (DHEA-S), and Sex Hormone Binding Globu-lin (SHBG). Data analysis was carried out chi-square and ANOVA tests as well as logistic regression analysis.

Results: Two hundred patients were in the CAD group and 135 individuals in control group. In the CAD group, 69 had single-vessel disease, 49 had two-vessel diseases, and 82 had three-vessel diseases. Statistically significant differences were observed between the individuals in the two groups with respect to age (P<0.0001), diabetes (P<0.0001), and a history of hypertension (P=0.018). The serum levels of free testosterone (P=0.048) and DHEA-S (P<0.0001) were significantly higher in the control group than in the CAD group; however, the serum level of SHBG was higher in the CAD group than in the control group (P=0.007). Results of the logistic regression analysis indicated that only age (P=0.042) and diabetes (P=0.003) had significant relationships with CAD.

Conclusion: Although the serum levels of some of the androgens were significantly different between the two groups, no association was found between androgenic hormone levels and the risk of CAD, due mainly to the effect of age and diabetes.

UP.002

Risk Factors of Severe Peritoneal Sclerosis in Chronic Peritoneal Dialysis Patients

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Introduction and Objective: Chronic Kidney disease is major health issues that might lead to End Stage Renal Disease in which patients need renal replacement therapy in order to survive. Peritoneal dialysis offers the healthiest way for starting renal replacement therapy, however exposes long term Peritoneal dialysis patients to a dangerous high mortality complication named Encapsulating peritoneal sclerosis. In this study we searched for possible risk factors of Encapsulating peritoneal sclerosis.

Materials and Methods: Data were collected from two Peritoneal dialysis centers covering period 1995 to 2012 and comprised 464 patients .Control group defined as Peritoneal dialysis patients stayed on Peritoneal dialysis > 42 month (n=122), and case group was 12 confirmed Encapsulating peritoneal sclerosis patients. Associations were analyzed using linear regression analysis.

Results: Prevalence and incidence of Encapsulating peritoneal sclerosis were 2.59% and 8.9% with an incidence of 0.7% patient-years, respectively. The age at start of Peritoneal dialysis in Encapsulating peritoneal sclerosis patients (32.75±10.8 year) was significantly lower compared with control group (49.61±16.18 year, p=0.0001). The mean duration of Peritoneal dialysis in Encapsulating peritoneal sclerosis and control group were 2494.4±940.9 and 1890.2±598.8 days (p= 0.002). Control group had 145 episodes of peritonitis during total duration of 7686 patient months (peritonitis rate of 1/53). This was 1/26 with a total 38 episodes of peritonitis during the total duration of 997 patient months (p=0.01) for Encapsulating peritoneal sclerosis group. In regression analysis, peritoneal dialysis duration, age at Peritoneal dialysis start and duration of Ultrafiltration failure were associated with Encapsulating peritoneal sclerosis.

Conclusion: Longer time being on peritoneal dialysis, younger age, and higher Ultrafiltration failure duration were the risk factors for Encapsulating peritoneal sclerosis development.

UP.003

Growth Kinetics of Small Renal Mass: Initial Analysis of Korean Active Surveillance Registry

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Introduction and Objective: To evaluate the clinical safety and natural history of active surveillance (AS) for incidentally diagnosed small renal mass (SRM).

Materials and Methods: We analyzed prospective data for patients who underwent AS for SRM. From 2010 to 2016, 37 SRMs of less than 3 cm were registered. CT and MRI were used for initial diagnosis and CT, ultrasonography, and chest CT were performed at six-month intervals. If there was no change in size during two years, follow-ups were performed annually. If the growth rate was more than 0.5 cm/year, if the diameter was more than 4 cm, or if clinical progression was observed, we regarded it as progression of SRM and recommended active treatment. We

UP.003, Table 1. Patient Demographics and Tumor Characteristics

	Overall	Not progressed	Progressed	p-value
No. cases (%)	37 (100)	31 (83.8)	6 (16.2)	-
Mean age at presentation, year (range)	64 (30, 86)	65 (37, 86)	59 (30, 82)	0.967
No. males (%)	26 (70.3)	22 (71.0)	4 (66.7)	0.833
No. diabetes (%)	7 (18.9)	5 (16.1)	2 (33.3)	0.315
No. hypertension (%)	14 (43.2)	14 (45.2)	2 (33.3)	0.680
Charlson comorbidity index				0.964
0	5 (13.5)	4 (12.9)	1 (16.7)	
1-2	25 (67.6)	21 (67.7)	4 (66.7)	
≥ 3	7 (18.9)	6 (19.4)	1 (16.7)	
Initial size, mm	18 (6, 28)	17 (6, 28)	21 (17, 26)	0.091
No. solid mass (%)	31 (83.8)	25 (80.6)	6 (100)	0.239
Growth rate, mm/year	2.3 (0, 19.0)	0.9 (0, 3.0)	9.6 (5.3, 19.0)	<0.001
No. biopsy (%)	12 (32.4)	7 (22.6)	5 (83.3)	<0.001
No. active intervention (%)	3 (8.1)	0 (0)	3 (50.0)	<0.001
Follow-up duration, month	28 (6, 80)	29 (6, 80)	23 (12, 41)	0.773

compared the growth rate and clinical course of SRM between patients who remained on surveillance and those who had progressed disease.

Results: The mean age was 63 years (range, 30-86 years) and the mean diameter was 1.8 cm (0.6-2.8 cm) at diagnosis. The mean follow-up period was 27.3 months (6-80 months) and the average growth rate was 0.2 cm/year (0-1.9 cm/year). Six patients (16.2%) showed progression of SRM. Three patients wanted continuous observation, and partial nephrectomy was performed on three other patients. None of the patients had clinical progression, including metastasis.

Conclusions: We could delay active treatment for patients with an SRM with scheduled surveillance if the SRM grew relatively slowly. If more long-term AS results are documented for more patients, AS could be an alternative treatment modality for SRM.

UP.004

Usefulness of a Deep Suturing Instrument (Manicepstm) at the Time of Peritoneal Dialysis Catheter Placement Surgery

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Introduction and Objective: Peritoneal dialysis (PD) catheter malposition is a serious complication that makes it difficult to continue peritoneal dialysis therapy. The peritoneal wall anchor technique (PWAT), which fixes the catheter to the anterior abdominal wall at the time of PD catheter insertion surgery, has been used to prevent PD catheter malposition. At our hospital, we have been using the PWAT with ManicepsTM and report good results.

Materials and Methods: ManicepsTM is a suturing instrument that facilitates sewing in the narrow and deep operation area. A total of 43 PD cases underwent the PWAT using ManicepsTM at the time of PD catheter insertion between January 2009 and December 2016 at our hospital. We examined the rate of perioperative complications associated with PD catheter insertion, the clinical course of peritoneal dialysis, and the occurrence of catheter malposition in these cases.

Results: The patients (20 males and 23 females) ranged in age from 33 to 88 years at the time of surgery (median 64 years old). Anesthesia for PD catheter insertion was local in 20 cases and lumbar in 23 cases. There were no complications during surgery. However, early after surgery, four cases of pleuroperitoneal communication and two cases of catheter occlusion due to omental wrapping were observed. In the postoperative observation period of 1 to 72 months (median 24 months), 2 cases of PD catheter malposition were observed, but both cases were naturally reduced.

Conclusion: The PWAT using ManicepsTM at the time of insertion of the PD catheter can be performed with a small incision under local anesthesia. This method is useful since it has a strong preventive effect against PD catheter malposition.

UP.005

Impact of Stone Clearance and Body Mass Index in Patients Undergoing Percutaneous Nephrolithotomy Using Asian Body Mass Index

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Introduction and Objective: In this prospective study we have used body mass index cut off values for Asian population in which >27.5 body mass index is considered to be obesity and observed the stone clearance after percutaneous nephrolithotomy.

Materials and Methods: Between January 2015 to March 2016, 137 patients underwent percutaneous nephrolithotomy. Pre-operative assessment of height in cm, weight in kilograms and body mass index was calculated. Postoperatively, stone clearance was defined as no stone visible or residual fragments less than 4 mm on plain X-ray kidney ureter bladder or ultrasound kidney ureter or bladder at the end of first week after procedure.

Results: In 137 patients undergoing PCNL, stone clearance was seen in 100 patients (73%), whereas 37 (27%) patients had residual fragments. Males were 82 (59.9%) and females were 55 (40.1%). Mean age was seen 45.36 (±16.58 SD), mean body mass index (BMI) was 27.46 (±4.952 SD) and mean operative time was 92.32 (±20.48SD). Categories of body mass index were stratified in 04 groups in which ≤23.5 were 31 (22.6%), >23.5-27.5 were 37 (27.0%), >27.5-32.5 were 48 (35.0%) and >32.5 were 21 (15.3%). Stone size was 1.5-2.4cm in 78 (56.9%), 2.5-3.0cm in 38 (27.7%) and >3.0 (15.3). Stone size was found to be statistically significant as clearance decreased with size of stone. In patients with stone size of 1.5-2.4cm, 2.5-3.0cm and >3.0cm, stone clearance was in 64 (82.1%), 25 (65.8%) and 11 (52.4%) patients. Stone clearance was 83.9%, 64.9%, 70.8% and 76.2% in patients with BMI ≤ 23.5, >23.5-27.5, >27.5-32.5 and >32.5% respectively. Post stratification Pearson Chi-square statistic was significant for stone size with 0.12 levels.

Conclusion: High BMI does not affect stone clearance, but increased size of stone decreases stone clearance in patients undergoing PCNL.

UP.006

Is Laparoscopic Adrenalectomy by Lateral Retroperitoneal Approach Safe and Feasible Treatment Option for Pheochromocytoma Larger than 6cm?

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Introduction and Objective: Laparoscopic adrenalectomy is a standard treatment option for adrenal tumors, but surgical difficulties increases with tumor size. The aim of this study is to evaluate the surgical feasibility of laparoscopic adrenalectomy by lateral retroperitoneal approach for large pheochromocytoma and to identify preoperative risk factors for intraoperative hypertension during surgery.

Materials and Methods: A retrospective review was performed in 51 patients who underwent retroperitoneal laparoscopic adrenalectomy for pheochromocytoma at a single institution between 2005 and 2016. Patients were divided into two groups according to tumor size: Group A (n= 27, < 6cm) and Group B (n= 24, ≥ 6cm). Patient characteristics and perioperative outcomes were analyzed and compared between 2 groups. Univariate and multivariate logistic regression analysis was performed to determine the preoperative risk factors for intraoperative hypertension.

Results: There were no significant differences in preoperative patient characteristics between two groups except tumor size (3.9 ± 0.9 vs. 7.4 ± 1.1 cm; p = 0.001) and urinary metanephrine (3.6 ± 2.4 vs. 9.4 ± 11.0 mg/d; p = 0.011). In perioperative analysis, Group B had longer operating time (p = 0.008), larger estimated blood loss (p = 0.000) and hemoglobin change (p = 0.002). But there was no significant perioperative complications and mortality. Intraoperative hypertension was observed in 25 (49.0 %) patients. A multivariate analysis revealed that tumor detection by symptoms from hormonal secretion (p = 0.004) and tumor size (p = 0.007) were significant risk factors of intraoperative hypertension.

Conclusion: Laparoscopic adrenalectomy by lateral retroperitoneal approach for pheochromocytoma is safe and effective with proper perioperative hemodynamic control, including tumors larger than 6cm. In present study, tumor detection by symptoms from hormonal secretion and tumor size were risk factors for intraoperative hypertension in patients with phechromocytoma.

UP.007

Rationalising Follow Up for Bosniak IIF Cysts: A Multicentre Study

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Introduction and Objective: There is a paucity of evidence supporting appropriate follow-up policies for Bosniak IIF cysts. Absence of guidelines mandate repeated imaging leading to considerable resource utilisation, expense and patient anxiety. In our study published in 2016, we aimed to establish how many patients diagnosed with Bosniak IIF cysts progressed into malignant lesions, and thus establish an appropriate follow up policy. We found a malignancy rate of only 0.5% in a 198 patients. Any progression was seen within the first two years. Our recommendation therefore, was that patients could be safely discharged after two years of satisfactory follow up imaging. We have reproduced this data in a new centre to further support our recommendation as part of a multi-centre study.

Materials and Methods: We identified patients diagnosed with Bosniak IIF cyst(s) on CT scanning from 2011-2015 in two separate NHS Trusts. We recorded patient demographics, duration, modality and frequency of follow-up. Any change in size, appearance or complexity of the cyst(s) was documented. Surgical intervention was recorded. Costing estimations of follow up and imaging were also recorded.

Results: Two hundred and forty nine patients were identified between the two centres. The majority of cysts were incidental findings (80%) with 49.5% of cysts > 3cm at diagnosis. Median follow up time was 29 months. 76.5% of cysts decreased in size or remained unchanged. Seven patients (2.8%) showed signs of radiological progression so underwent radical intervention. However only two patients (0.8%) demonstrated histological evidence of malignancy. 102 (41%) patients were followed up beyond 24 months, none of which had any radiological progression.

Conclusion: Our data supports our original study, observing a low radiological progression rate of Bonsiak IIF cysts (2.8%). Any radiological progression was within the first 24 months. Our confirmed malignancy rate was 0.8%. Our previously published single-centre study demonstrated a 0.5% malignancy rate. This remains significantly lower than rates published in the wider literature. We therefore continue to support our follow up policy that patients can be safely discharged after 2 years of non-progressive surveillance. Rational follow-up for Bosniak IIF cysts may have cost-saving implications and alleviate pressure on radiology and urology services.

UP.008

Laparoscopic Adrenalectomy: Posterior Retroperitoneoscopic or Transperitoneal Approach?

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Introduction and Objective: To compare the results of posterior retroperitoneoscopic (PRA) or lateral transperitoneal approach (LTA) in laparoscopic adrenalectomy in the short and medium term.

Materials and Methods: Prospective cohort study. We included 22 patients who underwent 24 adrenalectomies (12 PRA and 12 LTA) between the months of January 2015 and May 2016. In the PRA group 2 simultaneous bilateral laparoscopic adrenalectomies were performed (1 synchronous bilateral adrenalectomy). Baseline, clinical and surgical evolution were compared.

Results: The median follow-up time was 6.5 months (Range: 1-16). The PRA and LTA groups were comparable in age, gender, BMI and presence of previous surgeries. Adenomas were the predominant lesions (41.7% in each group). The average operating time in PRA and LTA was 104.3 ± 21.2 and 146 ± 32.9 minutes, respectively (p 0.05). We found no differences in length of hospital stay, bleeding, and complications. All patients achieved clinical cure.

Conclusions: The PRA technique is a safe approach, with results comparable to LTA and shorter operating time. It also allows intervening simultaneously and synchronously both adrenal glands without the need of repositioning the patient.

UP.009

Bilateral Laparoscopic Adrenalectomy of Salvataje in Cushing Syndrome Refractory to Medical Treatment

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Introduction and Objective: Ectopic Adrenocorticotropic hormone (ACTH) production accounts for 7-15% of cases of endogenous Cushing Syndrome (CS) and is generally associated with the production of neuroendocrine tumors. Bilateral Laparoscopic Adrenalectomy (BLA) represents a valid option for patients with Ectopic CS in whom surgical treatment of the secretory tumor is not possible and in whom there was no response to medical treatment. Our objective is to describe the role of BLA as a therapeutic option for the management of Cushing's syndrome refractory to medical treatment.

Materials and Methods: We performed a retrospective analysis of the clinical records of our institution. Four BLAs were performed in patients with Ectopic CS refractory to medical treatment during the period from January 2014 to February 2016.All patients were evaluated by a multidisciplinary team that jointly decided the most appropriate time for surgery. The following protocol data were analyzed: age, sex, body mass index (BMI), disease evolution time, biochemical parameters, approach, duration of the procedure, need for conversion, intraoperative complications, hospital stay, morbidity and mortality. Postoperative complications were classified according to the Modified Clavien-Dindo Scale. Therapeutic success was defined as cases where there was no need for conversion and cortisol levels decreased considerably after surgery.

Results: Four patients were diagnosed with Ectopic CS. The mean age of the patients was 40 years (23-50). Three were women. BLA was performed in all patients successfully. No patient required conversion to open surgery. There were no intraoperative complications. Two patients had postoperative complications; One hematoma of the wound and another anemia, emphysematous cystitis and acute urinary retention. A patient died of neoplastic pleural effusion in the context of advanced disease. Average hospital stay was: 28 days (4-81). The mean operative time was 245 minutes. (137-390). Hypercortisolism has resolved in all patients as well as remission of symptoms after surgery.

Conclusions: Although it is not considered the first therapeutic option in most cases, BLA is an effective salvage alternative to control the symptoms associated with overproduction of corticosteroids in patients with ectopic CS refractory to medical treatment.

UP.010

Contemporary Surgical Management of Renal Oncocytomas in the UK: BAUS National Audit Data from 2013 to 2015

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Introduction and Objective: Imaging cannot reliably distinguish renal oncocytomas (RO) from cancer so surgical extirpation is common. We report on the contemporary UK experience of surgical management of RO.

Materials and Methods: Descriptive analysis of cases with a final diagnosis of RO retrospectively included by surgeons into The British Association of Urological Surgeons (BAUS) registry from 01/01/2013 to 31/12/2015.

Results: In 3 years, 880 RO were surgically removed in 124 centres (23.9% in 2013, 36.6% in 2014 and 39.5% in 2015). Most patients were male (n=538; 61.6%), and only 2 had confirmed hereditary disorders (0.3%). Median age was 68 years (interquartile range (IQR) 14; 25-99). Median lesion size was 4.2cm (IQR 3; 1-21cm), 44.7% were T1a and 37.2% were T1b lesions. Median age-related Charlson score was 2, median ASA grade was 2. Twenty-two patients (8 in 2013, 7 in 2014, 7 in 2015) had preoperative biopsy (median lesion size 3.8cm; 1.5-8.5cm): 11 biopsies were reported as benign, 6 non-diagnostic, and 5 as malignant. The majority of patients had radical (n=493; 56%) or partial (n=356; 40.5%) nephrectomy. Most procedures were minimally invasive (60.3% (n=527) laparoscopic, 14.2% (n=124) robotic, and 3.2% (n=28) hand-assisted). One in 6 patients (n=147; 16.7%) developed intra- or early postoperative complications: 39 were Clavien-Dindo grade III or above, including 2 deaths. One additional death occurred within 30 days of surgery.

Conclusion: In this analysis the complication burden associated with surgical removal of a benign tumour was high. Increased utilisation of renal tumour biopsy may inform management and change treatment outcomes in patients with RO.

UP.011

Enhanced Recovery for Renal Surgery - Can Length of Stay Be Further Influenced by Different Anaesthetic Regimes?

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Introduction and Objective: Enhanced recovery (ER) provides a faster return to normality, decreasing length of hospital stay (LOS) thus improving overall patient satisfaction without leading to increased readmission rates with adverse events. Different consultant anaesthetists have different approaches to intra and initial post-operative analgesia we wanted to see if this had any bearing on LOS and ER.

Materials and Methods: A review was performed on all patients undergoing nephrectomy and nephroureterectomy over a five year period. Data was collected on demographics, surgical approach, intra and post-operative analgesia, use of drains, catheters and LOS. The Mann whiney U test and Parametric multivariable regression were used for statistical analysis, P= <0.05 was considered significant.

Results: Two hundred and forty-one patients were included; 172 (71.4%) nephrectomy, 50 (20.7%) nephroureterectomy and 16 (6.6%) partial-nephrectomy. 106 (44%) laparoscopic, 123 (51%) open and 12 (5.0%) converted approach. Overall median LOS 5 days (range 2-30). Univariate analysis showed that intra-operative morphine, diclofenac, and local anesthetic infiltration to skin/rectus sheath, regular post-operative oral diclofenac and zomorph significantly decreased LOS in patients undergoing renal surgery (p=≤0.05). Epidural use significantly increased LOS (p=0.00). Other intra-operative and post-operative analgesic regimes had no bearing on LOS. This included ketamine/lignocaine and remi-fentanyl infusions intra-operatively. Parametric multivariable regression was used to test the effect of all variables on a Log transformation of LOS. Early trial without catheter and swift drain removal had the biggest impact on LOS (p ≤0.001). Post-operative oral tramadol was the only analgesic to significantly affect LOS p=0.008.

Conclusion: Intra-operative analgesic variations did not have any significant effect on LOS and therefore standardisation is not recommended. Epidural use should be avoided if possible. The use of post-operative local anaesthetic into the skin and rectus sheath should be adopted by all surgeons as a standard of care.

UP.012

Emergency Retrograde Ureteric Stent Insertion: An Evaluation of Current Practice and Factors Affecting Treatment Delays

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Introduction and Objective: Patients requiring emergency retrograde ureteric stent (ERUS) often encounter treatment delay. We felt this may be due to incorrect prioritisation by emergency theatre. Our aim was to establish whether appropriate patients were undergoing ERUS and assess factors contributing to delay.

Materials and Methods: An analysis of patients undergoing ERUS within a 12-month period. Data collected included; primary insertion/exchange, stent indication, size/location of ureteric calculi present, evidence of systemic inflammatory response syndrome (SIRS), sepsis and AKI. Time to theatre and discharge were also recorded.

Results: Sixty-five patients had ERUS. Fifty-nine (90.8%) unilateral stents (56 insertions, 2 exchanges). Six (9.2%) bilateral ERUS (4 exchanges, 2 insertions). Stone disease accounted for 56 (86.5%); 37 (56.9%) stones ≥6mm. Blocked stents, PUJ obstruction and extrinsic compression from malignancy were responsible for the others (10.8%, 1.7%, and 3.0 % respectively). Main indication for ERUS; 21 (32.3%) infection with an obstructed system, 18 (27.7%) AKI, 17 (28.8%) unremitting colic. Eleven (16.9%) patients had sepsis, 21 (32.2%) patients fulfilled the SIRS criteria, 26.1% were postponed by ≥1 day, 6.1% entered theatre ≥5pm the subsequent day. Eleven (16.9%) patients were discharged the day of surgery, 23 (35.4%) discharged within 23 hours, including 18 (27.7%) operated on out of hours.

Conclusion: Current patient selection is appropriate. High numbers of patients are being postponed increasing morbidity. In light of these findings, we recommend a change to emergency theatre protocol. Operating on patients within daytime hours where possible would facilitate increased same-day discharges, increasing bed capacity and a subsequent economic benefit.

UP.013

Laparoscopic Adrenalectomy: Transperitoneal or Retroperitoneal Approach?

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Introduction and Objective: Since its first description in 1992 by Gagner, laparoscopic adrenalectomy has become the gold standard for the surgical treatment of small adrenal lesions. Its advantages over the classical approach have been demonstrated. It can be performed either by transparietal or retroperitoneal approach. We aim to compare the results of retroperitoneal laparoscopic adrenalectomy with those performed by transparietal approach.

Materials and Methods: A retrospective study including all cases of laparoscopic adrenalectomy performed at the Urology department of La Rabta hospital, Tunis, between 2001 and 2015.

Results: Forty patients underwent laparoscopic adrenalectomy. There were 29 women and 11 men, with a mean age of 42 years. The most common preoperative diagnosis was Conn's adenoma in 21 cases (52.5%), followed by Cushing's syndrome in 7 cases (17.5%) and pheochromocytoma in 6 cases (15%), while the tumor was accidentally dicovered in 6 cases (15%). The mean size of adrenal tumors was 2 cm. Fourteen patients underwent a transperitoneal surgery. Eleven of them had a right adrenal tumor and 3 had a left adrenal tumor. The mean duration of surgery was 205 minutes. Only one patient had gastric deperitonization. One patient had an intraoperative hemorrhage. The mean length of hospital stay was 3 days. Twenty six patients underwent a retroperitoneal surgery. Twenty two of them had left adrenal tumor. The mean duration of surgery was 171 minutes. In 3 cases, peritoneum was accidentally opened and has been fixed. One patient had a postoperative blood loss requiring transfusion. The mean length of hospital stay was 3 days.

Conclusion: Transperitoneal and Retroperitoneal Laparoscopic andernalectomy are both safe and effective. The choice between these two approaches depends on the experience and preference of the surgeon.

UP.014

Renal Transplant Survey

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Introduction and Objective: The primary intention was to discover if there are international standards in Renal transplantation and if these match the current teachings at our transplant unit in Groote Schuur Hospital (GSH), University of Cape Town, South Africa.

Materials and Methods: A questionnaire was created using an online survey tool (Qualtrics®), and distributed to a list of email addresses supplied by the unit's senior transplant surgeon (Dr. E. Muller).

Results: Results were compared from Cape Town respondents to rest of World. A literature review was performed on the questions and on the history of transplantation. Ethics was approved by FHS HREC number 193/2015. Results 18.8% (30/160) surveys were completed, 4 were from CT. 66.7% work exclusively in public sector, 83.3% are transplant surgeons (10% urologists) and 43.3% have >20 years operative experience. 66.7% state units perform >60 transplants/year. 30% use living donors in >50% of their surgeries. If no anatomic abnormalities were noted in open living donor nephrectomy, 100% of CT group choose the right kidney, versus 73.1% of other group harvest the left. The internal iliac artery is used (100% CT vs. 38.5%), and external iliac vein by 86.7%. 80% perform ureteroneocystostomy with a tunnel, 75% of CT group never use a DJ stent, while 69.2% of other group use it routinely. Sixty percent routinely use closed suction drains. Catheter removal on day 4-7 (66.7%), [25% of CT remove >7days]. 83.3% do not routinely biopsy the kidney, and 63.3% would biopsy prior to treating for possible acute rejection.

Conclusions: There are global trends in Renal transplantation. South African responses are in line with global trends. However the sample size is too small for a statistically significant result. Reassuring when resources, donors and theatre time are limited in a developing nation.

UP.015

Current Diagnostic Accuracy of Conventional Computed Tomography Scan in Surgically Removed Benign Renal Tumors

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Introduction and Objective: Improvement in the accuracy of diagnosing benign renal tumors preoperatively would reduce the subsequent unnecessary invasive treatments. In this paper, we evaluated the current accuracy of computed tomography (CT) for diagnosing benign renal tumors.

Materials and Methods: We retrospectively reviewed 905 patients who underwent preoperative CT followed by surgical resection of the renal lesions at our institution between June 2009 and October 2013. Of these, final pathology was benign in 156 patients (17%). After exclusions, 140 patients with 163 benign tumors were included in this study and 3-sets of the CT interpretations by radiologists with varying levels of experience were analyzed.

Results: The median size of 163 tumors was 2.9cm (range 0.6 to 20.9). The final histological breakdown was as follows: oncocytomas (54.6%, n=89), angiomyolipomas (AMLs) (30.7%, n=50), renal cysts (8.0%, n=13), other miscellaneous benign tumors (6.7%, n=11). Preoperative CT were reported by primary radiologists as 'highly suspicious for renal cell carcinoma (RCC)' (34.4%), 'possible RCC' (36.8%), 'equivocal whether RCC or benign tumor' (8.0%), and 'suspicious for benign tumor' (20.9%). More than half of tumors with 'highly suspicious for RCC' were histologically diagnosed as oncocytomas (69.6%), followed by lipid poor (lp) AMLs (17.9%). The sensitivities of diagnosing oncocytomas were 3.4%, 9.0% and 13.5% in primary radiological reports, second blinded reviews, and third non-blinded reviews, respectively (p=0.055). Even non-blinded third reviews by an experienced radiologist found classic CT findings in only 13.5% of oncocytomas. The sensitivities of diagnosing AMLs were 46.0%, 58.0% and 62.0% in the 3-sets of CT interpretations, respectively (p=0.246). As for renal cysts, the sensitivities were 69.2%, 92.3% and 100% in the 3-sets of CT interpretations, respectively (p=0.051). In primary reports, the positive predictive values were 95.8% in lp-AMLs, 60.0% in oncocytomas, 69.2% in renal cysts, respectively (p<0.05).

Conclusions: Current conventional CT imaging still has limitations in differentiating oncocytomas and lp-AMLs from renal cell carcinomas, even when images were re-examined by experienced radiologists. In order to reduce unnecessary surgery, complementary roles of other imaging modalities and percutaneous biopsy may be crucial.

UP.016

Can the Possible Renoprotective Effect of Remote Ischemic Preconditioning Enable Safe Prolongation of the Warm-Ischemia Time During Partial Nephrectomy? Initial Results of an Animal Study

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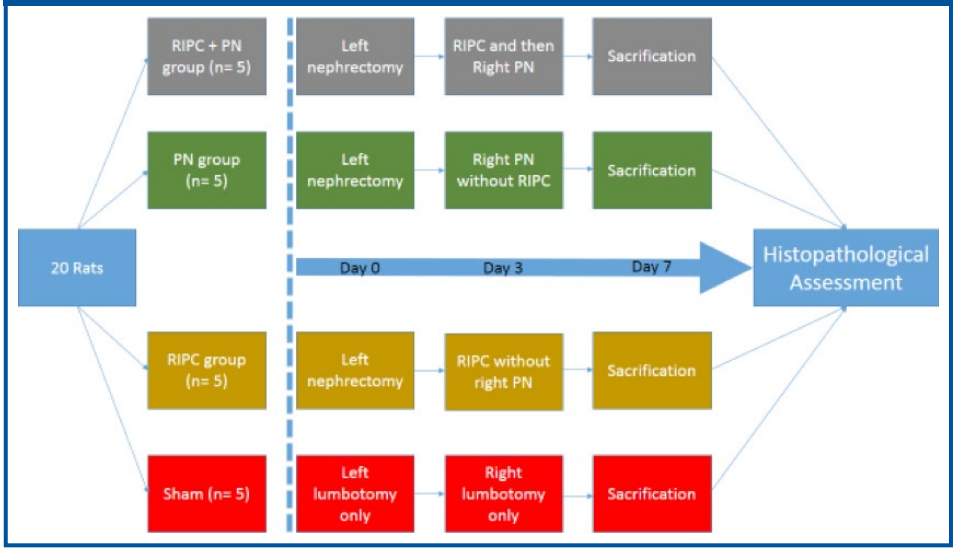
Introduction and Objective: We aimed to test the potential utility of ischemic preconditioning in decreasing the level of renal functional impairment, induced by the ischemic insult of partial nephrectomy (PN), in rats with solitary kidneys.

Materials and Methods: Twenty wistar-albino rats were recruited. Four groups, each consisting of 5 rats, were constructed; remote ischemic preconditioning (RIPC) + PN, PN, RIPC and sham. Study schema is summarized in figure 1. PN denoted wedge resection of a parenchymal island under warm ischemic conditions. Remote ischemic preconditioning was employed via sequential compression/decompression of the saphenous artery. Right kidneys of the sacrified rats were examined histopathologically. Paraffin-embedded sections were stained with hematoxylin-eosin and periodic acid-schiff stains. Blinded evaluation by conventional light microscopy was carried out by two uropathologists and their agreed consensus was recorded.

UP.016, Figure 1. Study Protocol



Results: Histopathological parameters were scored depending on their presence/absence and the number of involved tubular epithelial cells if present: swelling of the tubular epithelium, loss of brush edge and tubular necrosis; 0:absent, 1:1-10 tubule, 2:>10 tubule. Tubular necrosis; 0:absent, 1:1-5 tubule, 2:5-10 tubule, 3:>10 tubule. Medullary cast formation, thyroidisation and inflammation: 0:absent, 1:present. A total score was designated for each rat by the summation of the scores assigned to each tested parameter and then the group's average score was calculated. Mean scores given to tubular necrosis and thyroidisation were 0.2, 0.8, 2.0, 2.5 and 0, 0.2, 1.6, 2.0 in the sham, RIPC, RIPC + PN and PN groups, respectively (p=0.001 and 0.003, respectively). The differences between the groups with regard to other parameters were less remarkable. The average total scores in the sham, RIPC, RIPC + PN and PN groups were 3.0, 5.4, 8.4 and 9.7, respectively (p=0.001).

Conclusion: Early histopathological changes consistent with morphological damage were significantly less prevalent in rat kidneys subjected to RIPC.

UP.017

Carcinoma of the Collecting Ducts of Bellini - Clinicopathological Features

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Introduction and Objective: Carcinoma of the collecting ducts of Bellini (CDC) is thought to be derived from the cells of the collecting duct of Bellini and accounts for <1% of renal malignancies. The rarity of these tumours and heterogeneity of histopathologic features, which occasionally overlap with papillary renal cell carcinoma and urothelial carcinoma of the kidney, limit our understanding of collecting duct carcinoma. Little is known concerning the optimal management of CDC. The aim of this study was to investigate the clinicopathological features of CDC.

Materials and Methods: All cases of CDC were analysed from January 2006 to December 2016. All pertinent clinical information was recorded, including patient age, sex, mode of presentation, evaluation modality, surgery type, macroscopic and microscopic findings, and survival data.

Results: Four patients are described, three men and one women, mean age of 72,3 (±14,8) years. One of them (25%) presented disseminated disease upon diagnosis. All patients were treated with radical nephrectomy (one case laparoscopic and three with open surgery). Two patients (50%) developed disseminated disease after surgery. The mean time from surgery to the development of metastases was 5.5 months. Two patients received systemic adjuvant treatment with sunitinib, without obvious response. One of these patients also received, after 3 months of sunitinib, treatment with axinitinib. Two patients had pulmonary metastases. The other patient with disseminated disease developed osseous metastases in the humerus, ribs and femurs. The latter patient was submitted to palliative radiotherapy. All tumours had a high Furhman nuclear grade (two patients with grade 3 and the other two with grade 4). The mean survival was 11.0 months (9.25-13.75).

Conclusion: CDC has a poor prognosis compared to non-CDC renal cell carcinoma. Treatment for CDC represents a future challenge and targeted therapies may play a role in selected cases.

UP.018

Ectopic Adrenals with Testicular and Para-Testicular Location: About 19 Cases

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Introduction and Objective: Surrenalectopy or accessory adrenal gland is a very rare congenital malformation. It usually does not have a clinical translation due to the lack of steroidal hypersecretion signs.

Materials and Methods: We report a retrospective series of 19 cases of surrenalectopy who have been followed at the urology department of CHU Habib Bourguiba of Sfax during a period of 16 years (2000 to 2016).

Results: The average age of our patients was 7 years with extremes of 2 to 41 years and a clear male predominance (63.15%). The revealing signs were testicular ectopia, isolated in 6 cases or associated with inguinal hernia by persistence of the peritoneo-vaginal canal in 10 cases and testicular pain in 3 cases. Clinical examination revealed palpable inguinal canal tumefaction in 3 cases suggestive of testicular ectopia, a painful nodule of the spermatic cord in 2 cases or testis in another case. Medical imaging detected the usual position and size of the two main adrenals. The surgical treatment consisted of a complete resection of the cortico-adrenal accessory tissue. The diagnosis was confirmed by pathological examination.

Conclusion: Ectopic adrenals may be the site of a tumor, in particular benign or malignant cortico-surrenaloma, therefore the surgical treatment must obey to the rules of carcinological surgery.

UP.019

Comparison of Diagnostic Yield and Accuracy of Optical Coherence Tomography and Conventional Renal Mass Biopsy for the Diagnosis of Renal Cell Carcinoma

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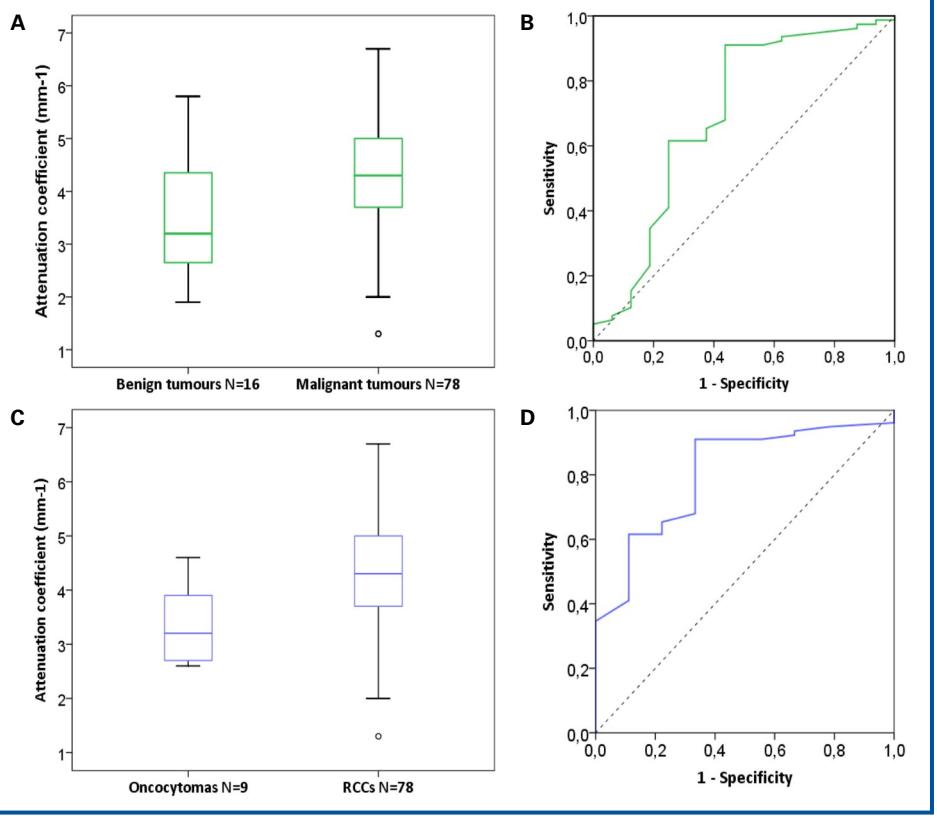
Introduction and Objective: Optical coherence tomography (OCT) is a real-time imaging technique that allows visualization of the microstructural anatomy of tissue. OCT differentiation between benign and malignant renal tumors by quantitative parameters (attenuation-coefficient;µOCT) has proven to be safe and feasible. We aim to A) determine diagnostic yield of OCT and renal mass biopsy (RMB), and B) to investigate the diagnostic accuracy of OCT and compare this with the accuracy of RMB for the differentiation of renal masses.

Materials and Methods: Percutaneous, needle-based OCT was performed in consecutive patients with a solid enhancing renal mass. Final treatment pathology was used for correlation to µOCT and RMB. Diagnostic yield was calculated dividing the non-diagnostics by the total amount of cases multiplied by 100%. µOCT values for benign and oncocytoma vs RCC were tested using Mann-Whitney test. Accuracy calculations were performed using ROC-curve and 2*2 tables for µOCT and RMB respectively.

Results: Since October 2013, OCT was performed in 95 patients. The diagnostic yield of RMB and OCT was 79% and 99% respectively. The median µOCT of benign tumours (3.2mm-1, IQR 2.65-4.35) and oncocytoma (3.38mm-1, IQR 2.68-3.95) were both significantly lower (P=0.0171, and P=0.0031 respectively) than the median µOCT of RCC (4.3mm-1, IQR 3.70-5.00) (Fig. 1A,C). To differentiate malignant from benign tumours, OCT shows a sensitivity, specificity, PPV and NPV of 91%, 56%, 91%, and 56%, and respectively. The accuracy of the OCT increases for differentiation between RCC and oncocytoma, with a sensitivity, specificity, PPV and NPV of 92%, 67%, 95% and 55% respectively. RMB has a sensitivity, specificity, PPV and NPV of 100%, 89%, 99% and 100% respectively.

UP.019, Figure 1. A) Boxplot of Benign vs Malignant Tumors; B) ROC Curve of Benign vs RCC; C) Boxplot of Oncocytoma vs RCC; D) Curve of Oncocytoma vs RCC



Conclusion: OCT accurately distinguish malignant from benign renal tumours, and demonstrates that OCT has a higher diagnostic yield than RMBs. Accuracy of OCT confirmed to be high with a sensitivity and specificity of 92% and 67% respectively.

UP.020

Early Imaging in the Follow-Up after Irreversible Electroporation for the Treatment of Kidney Tumours

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Introduction and Objective: Irreversible electroporation (IRE) is a new ablation technique for the treatment of kidney tumours. Currently, data is lacking on which imaging modality to use for the visualization of the ablation zone (AZ) after IRE. To detect recurrence and residual disease in the follow-up, it is vital to validate a suitable imaging modality. We aim to report on the evolution of the ablation zone volume (AZV) using MRI, CT, gray-scale ultrasound (US), and contrast enhanced ultrasound (CEUS). Additionally, we quantitatively report on the AZV and the correlation with the needle configuration (NC).

Materials and Methods: IRE was performed in consecutive patients that are candidates for ablation and presented with a solid small renal mass. Imaging was performed preoperative, 1 week, 3 months, and 6 months post-IRE and assessed by an interventional radiologist specialized in IRE. The AZV on CT and MRI was determined by adding the areas using the planimetrical analysis of IMPAX-software.

Results: From 09-2016 till 03-2017 imaging was acquired from the first five patients within our prospective trial. Follow-up varied from 1 week till 6 months. Qualitative evolution of different imaging modalities showed that CT, MRI, gray-scale US and CEUS were able to visualize the AZ (Fig 1). At 1 week post-IRE the mean AZV was 2.3 times larger than the NC. At 3 months post-IRE the mean AZV was 1.2 times larger than the NC. At 6 months post-IRE the mean AZV was 0.8 times larger than the NC.

Conclusion: We demonstrate that CT, MRI, gray-scale US and CEUS is able to adequately visualize the AZ post-IRE. Early results demonstrate that enlargement of the AZ occurs at 1 week post-IRE up to 2 times larger than the NC. From 3 months post-IRE a trend is observed in which the AZV reduces in size, down to 80% of the NC.

UP.021

Usefulness of Laparoscopic Partial Adrenalectomy : Single Surgeon Experience

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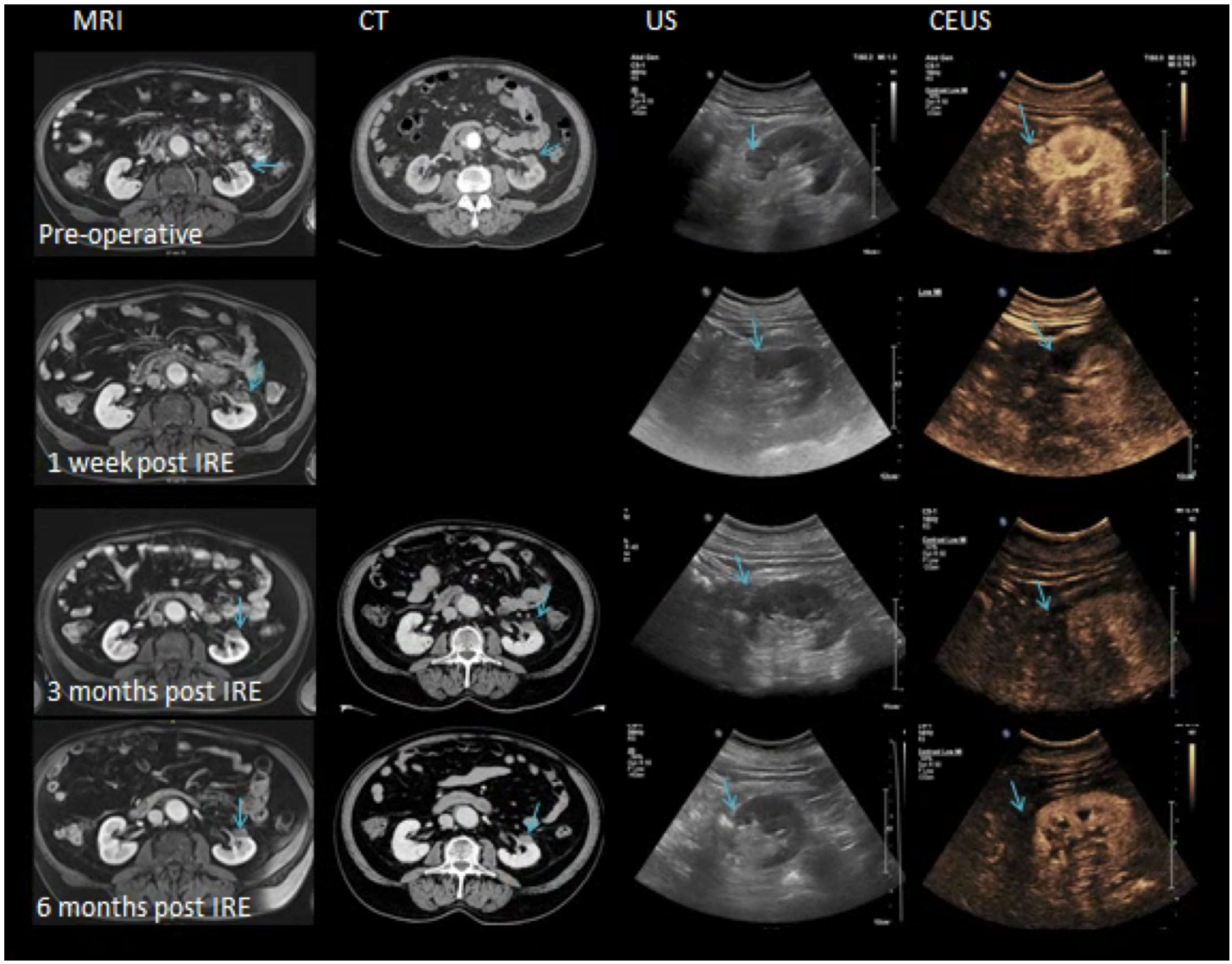
UP.020, Figure 1. Evolution of the Ablation Zone 1 Week, 3 Months and 6 Month Post-IRE on MRI, CT, Gray-Scale US and CEUS



Introduction and Objective: There is growing interest in partial adrenalectomy to avoid the side effects of potential adrenal insufficiency and life-long steroid replacement in select cases. Therefore, we intended to evaluate usefulness of laparoscopic partial adrenalectomy (LPA) by comparing the surgical and long-term functional results of LPA to those of laparoscopic total adrenalectomy (LTA).

Materials and Methods: A total of 120 transperitoneal laparoscopic adrenalectomies were performed for adrenal gland masses between May 2004 and December 2016. All surgeries were performed by single surgeon. The data were collected retrospectively through review of the medical charts. We compared the surgical and long-term outcomes between the two surgical methods.

Results: Sixty-six LTAs were performed, and 54 tumors were removed by LPA. There were no differences between the two groups with regard to mean age at presentation, mean tumor size, or postoperative stay. The mean operating time was significantly shorter in the LPA group than that of the LTA group. The mean estimated blood loss in the LPA group was significantly higher than that of the LTA group, but none of the patients required blood transfusion. Two cases were converted to open surgery in the LTA group, and no major complications developed. The biochemical markers and laboratory values normalized postoperatively in all patients with functional adrenal masses. There was no local recurrence during the follow-up period.

Conclusions: Our data demonstrated that the surgical outcomes were comparable to those of LTA. Especially, all patients of LPA group remained steroid independent, as well as recurrence-free at long-term follow up. Therefore, for patients with adrenal tumor whether it is unilateral or bilateral regardless of hormonal activity, LPA should be recommended as a primary surgical approach whenever possible.

UP.022

Association between Irritable Bowel Syndrome and Overactive Bladder: Research Survey

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Introduction and Objective: We investigated the relationship between irritable bowel syndrome (IBS) and overactive bladder (OAB) in men and women by using questionnaires.

Materials and Methods: This research survey study was based on multicenter and conducted among men and women attending the health care center with over 20 years old. Korean version of the Rome III criteria for the diagnosis of IBS, overactive bladder symptom score (OABSS), self-rating depression scale (SDS)

for depressive symptoms, and international prostate symptom score (IPSS) were used for screening.

Results: Total number of 609 (men: 257, women: 352) people answered the questionnaire. The prevalence of IBS and OAB was 31.9% and 19.2%, respectively. Among OAB patients, 25.6% had IBS. Comparing OABSS between IBS and none-IBS were 1.70±2.48 vs. 2.48±2.79 (p<0.001). OABSS question number 3 were 0.69±1.16 vs. 0.87±1.26 (p=0.08). In SDS, IBS had higher score than none IBS (n=201) (44.92±13.71 vs. 39.19±10.39, p<0.001). In men, none-IBS (n=56) had higher OABSS and OABSS question number 3 than IBS (OABSS: 2.56±2.69 vs. 1.57±2.43, p=0.01, OABSS q3: 0.92±1.26 vs. 0.66±1.13, p=0.17). Also in women, none-IBS (n=214) had higher OABSS and OABSS question number 3 than IBS (n=138) (OABSS: 2.40±2.87 vs. 1.76±2.52, p=0.03, OABSS q3: 0.83±1.25 vs. 0.70±1.18, p=0.32).

Conclusion: IBS in the adult had no relationship with OAB in our study. These data suggest more studies are needed to figure out relationship between IBS and OAB.

UP.023

Ambulatory Voiding in the Elderly Based on Functional Assessment by the Expert Team during Hospital Care

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Introduction and Objective: The aim of this study was to evaluate the difference about 6-month outcomes of expert team-led continence care service for Japanese elderly patients with lower urinary tract symptoms. Most studies evaluating the outcomes of continence care services have had short follow-up durations with limited knowledge on whether benefits are sustained beyond 12 months.

Materials and Methods: Two comparison groups were recruited: (1) Patients with lower urinary tract symptoms attending expert team-led community-based continence care programme; (2) hospital care patients with lower urinary tract symptoms identified by screening, receiving usual medical care. Self-reported symptom severity, health-related quality of life, patient enablement, free of catheters was measured at baseline and 6 months. Data collection occurred from March 2016-March 2017.

Results: Baseline and 6-month data were available for 170 continence care and 158 usual care subjects. After controlling for baseline characteristics, the continence care group was observed to have greater reductions in symptom severity and larger improvements in disease-specific health-related quality of life, patient enablement and general health perception than the usual care group. Deterioration in the mental components of generic health-related quality of life was observed in the usual care group, but not in the continence care group.

Conclusion: Over 12 months, when compared with usual medical care, expert team continence care services were effective in reducing symptom severity and improving health-related quality of life, patient enablement and general health perception and provided protection against deterioration in the mental components of health-related quality of life in patients with lower urinary tract symptoms.

UP.024

The Diagnostic Yield of Flexible Cystoscopy in Patients Under 40 Years

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Introduction and Objective: Flexible cystoscopy (FC) is the most common urological intervention. Due to its inherent morbidity and cost, it should be rationalized to patients with a true potential of underlying pathology. We aimed to evaluate its use in patients under 40 years old who are often referred with recurrent urinary tract infections (UTIs), haematuria and bladder symptoms.

Materials and Methods: Procedure outcomes in our tertiary center over 12 months were reviewed for patients under 40 years old. Patient demographics, referral source, indication and results were recorded.

Results: Diagnostic FC was performed in 228 patients under 40 years old. A normal FC was noted in 210 patients (92%), 72 males and138 females, with a median age of 33.5 years (range 18-39). In this group, 57 were performed for UTI+/-haematuria, 52 for bladder symptoms, 52 for non-visible haematuria (NVH) and 49 for visible haematuria (VH). Pathology was identified in only 18 patients (7.9%). Only 6 (2.6%) bladder malignancies were diagnosed, 5 males and 1 female with a median age of 35 years. Four presented with VH and 2 with incidental masses on imaging. Urethral stricture was noted in 7 patients and bladder debris in 5. These 12 patients all presented with lower urinary tract symptoms or UTI.

Conclusions: The diagnostic yield of FC in patients under 40 years is very small, especially in females and NVH. No significant pathology, except stricture, was identified in the absence of VH and abnormal imaging. Rationalizing the use of flexible cystoscopy in this age group would significantly reduce cost and workload.

UP.025

Efficiency of Combined Using of Extracorporeal Shock Wave Therapy and Phytotherapy in Prostatolithiasis

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Introduction and Objective: Prostatic calculi (PC) are often complication /co-morbidity of chronic prostatitis (CP) and benign prostatic hyperplasia.

Materials and Methods: Seventy-three patients between the ages of 18 and 60, average of 42.7 ± 3.8 years and suffering from CP for 4-16 years at an average of 5.1 ± 3.4 years were studied. The patients of CP category 3-a and comorbidity of PC, were divided into three groups: 1st (22 patients) were treated with phytodrug canephron for one month, 2nd (23 patients) underwent extracorporeal shock-wave therapy (ESWT) with the Dornier Aries® (Dornier MedTech GmbH, Germany) using smart focus technology by the following protocol: two procedures per week, four weeks for a course of total 8 procedures. Third group (28 patients) received combined therapy by ESWT and canephron. Level of lithogenesis (LOL) was estimated by transrectal ultrasound investigation as followed: 0 – PC not found, 1- solitary calculi in para-urethral zone, 2 – numerous calculi in para-urethral zone, 3 - numerous calculi in para-urethral and distal, peripheral zones. Scores of National Institutes of Health Chronic Prostatitis Symptom Index (NIH-CPSI) were estimated too. Efficiency was evaluated in one month and three months after finishing the therapy.

Results: Monotherapy with canephron had no lytholitic effect, but decreased inflammation, decreased voiding symptoms, and improved quality of life and pain. Qmax and Qave increased on 29.4% and 22.9%, accordingly. Monotherapy with ESWT was moderately effective. In one month: average score on pain decreased on 11.9%, average score of voiding symptoms improved on 37.2%, LOL decreased on 16.7%. In three months domain "pain" decreased on 69.6%, voiding symptoms improved on 55.8%, and LOL decreased about twice. Combined therapy, group 3, showed the highest results. In three months there were no signs of inflammation in 67.9%; average score of domain "pain" decreased on 86.7%, voiding symptoms improved on 65.2%, and LOL decreased on 60.9%.

Conclusions: Most effective in the therapy of Chronic Prostatitis complicated by Prostatic Calculi is combined therapy using phytotherapy and ESWT. Final results should be available in three months.

UP.026

A Multicenter, Observational, Open-Label 4 Week Study of Efficacy and Patient's Satisfaction of Tamsulosin Monotherapy vs Tamsulosin with Solifenacin in Men with Lower Urinary Tract Symptoms (LUTS) Related to Benign Prostatic Hyperplasia (BPH)

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Introduction and Objective: To assess the efficacy and patient's satisfaction in the treatment of lower urinary tract symptoms (LUTS) related to benign prostatic hyperplasia (BPH), prospective, randomized, real practice-based application of alpha-blocker monotherapy vs. alpha blocker with antimuscarinic were compared.

Materials and Methods: One hundred and seventy-five male patients with moderate degree of LUTS (both voiding and storage symtoms) from 5 centers were enrolled in randomized pattern. Patients were divided into 2 groups; group 1 included patient treated with tamsulosin 0.2mg monotherapy (15 patients/center), group 2 was included with tamsulosin 0.2mg combined with solifenacin 5mg (20 patients/center). Inclusion criteria were male patients with no history of LUTS-related medications, aged from 40 to 80 years old, maximal uroflow rate (Qmax)≥10ml/sec,

post-void residual urine (PVR)≤100mL, total International prostatic symptom score (IPSS)≥8, OAB symptom score (OABSS)≥3, prostate size on digital rectal exam. was from 20 to 60gm and PSA value≤4ng/mL.. Parameters included 3 days-voiding diary, IPSS/QoL, uroflow/PVR, Patient's perception of bladder condition (PPBC), OABSS and evaluated at 0 and 4 weeks. Statistical analysis was done with Student's t-test.

Results: Baseline measurements showed no difference (except PVR) between two groups (Table 1). After 4 weeks treatment, parametrs such as IPSS/QoL (P<0.001) , PPBC (P<0.05), OABSS (P<0.001) improved significantly in both groups. Nocturia (P<0.05) and No. of urgency (P<0.05) were significantly improved in group 2 (Table 1). No incidence of acute urinary retention was reported and a case of moderate degree dry mouth was reported.

Conclusions: After 4 weeks treatment of tamsulosin monotherapy and combination of tamsulosin with solifenacin showed improvement of important LUTS parameters, satisfaction and combination groups showed better results in number of urgency and nocturia compared with monotherapy group. No urinary retention case was reported.

UP.027

Role if Urinary Cytology In the Evaluation of Storage Symptoms in Women

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Introduction and Objective: Urinary cytology is a test to look for abnormal cells in the urine, and it is mainly used for the evaluation of inflamatory or neoplastic disorders affecting the urethra, the bladder, the ureters and renal pelvis. For high-grade urothelial tumors and in-situ carinoma, its specificity raises up to 90% with few false positives. Sensitivity may be improved by collecting three urine samples. The aim of the study is to evaluate the role of urinary cytology in a sample of women with storage symptoms.

Materials and Methods: Multicentric study with a sample of 264 women complaining of storage symptoms. Variables investigated: Age, cause of referral, main diagnosis, secondary diagnoses, medical and surgical background, drugs, toxics, urinary pH, urine analysis (nitrites, esterases, leucocytes, erytrocytes, squamous cells, cylindres, bacteria, cristals), urine culture, imaging studies, urinary cytology (no cells, cells (malignant, epithelial, squamous) leucocytes, erytrocytes, bacteria, Candida). Statistical analysis: descriptive statistics, ANOVA, Student's t-test, Fisher's exact test. p<0.05 was considered statistically significative.

Results: Average age 52.42 years (range 16-91). The 92.80% of the women complained of urinary frequency and urgency. One patient without any risk factors, negative urine culture and showing squamous cells in her cytology was diagnosed with a high-grade bladder carcinoma in-situ. Candida was identified in 4.66% of the cytologies (not shown in the urine culture). Most frequent cytological findings were: epithelial cells (17.33%), no findings (9.33%), leucocytes (8.66%), leucocytes + bacteria (8%).

Conclusions: Storage symptoms may be present in a high variety of urological and gynecological disorders, and it is usually included in the definitions related to voiding and storage symptoms that obvious local pathologies should be excluded. Given that urinary cytology can be clinically significant in women with storage symptoms and without risk factors for bladder cancer, it might be useful to include it in their study protocol.

UP.028

Efficacy and Safety of Onabotulinumtoxina in Patients with Overactive Bladder According to Site of Injection: A Systematic Review and Meta-Analysis

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Introduction and Objective: We conducted this study to assess the efficacy and safety of OnabotulinumtoxinA according to site of injection for treating overactive bladder.

Materials and Methods: A systematic literature review was performed to locate randomized controlled trials of OnabotulinumtoxinA for treatment of neurogenic detrusor overactive bladder and idiopathic overactive bladder in adults. We searched databases such as MEDLINE, EMBASE, and the Cochrane Controlled Trials Register using the Ovid platform. This meta-analysis was based on Cochrane Review Methods.

Results: Seven studies (339 participants) were included. Trigone-including intradetrusor injection gave rise to a lower detrusor pressure (WMD = -2.55cnH2O, 95% CI = -4.16 to -0.95, *P* = 0.002, I2 = 0%) and higher volume at first desire to void (WMD = 17.54 ml, 95% CI = 1.00 to 34.07, *P* = 0.04, I2 = 0%) than trigone-sparing intradetrusor injection. Incontinence episodes were also significantly less frequent after trigone-including intradetrusor injection (WMD = -1.01 numbers per day, 95% CI = -1.96 to -0.07, *P* = 0.04, I2 = 87%). There were no differences in efficacy according to injection site between intradetrusor and suburothelial injection, or in safety in terms of the incidence of vesico-ureteral reflux, hematuria, general weakness, bladder discomfort, large postvoid residual, and urinary tract infection.

Conclusion: Trigone-including OnabotulinumtoxinA injection is superior to trigone-sparing injection in terms of efficacy, as measured by detrusor presser, higher volume at first desire to voidand episodes of incontinence, without any difference in complications. However, the depth of injection does not influence the efficacy or safety of OnabotulinumtoxinA injections.

UP.029

Effects of Highly Concentrated Hyaluronic Acid and Chondroitin Sulphate on Ureteral Stent Discomfort after Ureteroscopic Lithotripsy: A Multicenter, Single Blinded, Randomized Controlled Study

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Introduction and Objective: Ureteral stent discomfort is a significant postoperative complication for many patients with ureter stones. Combined use of narcotics, alpha blockers and anticholinergic medications did not yield consistent satisfactory outcomes. We investigated the effect of highly concentrated hyaluronic acid (HA) and chondroitin sulphate (CS) to relieve ureteral stent discomfort.

Materials and Methods: A total of 100 patients underwent ureteroscopic lithotripsy for ureter stone. Recruited patients were randomly divided into two groups: Group I (46 patients, experimental group) and to the group II (46 patients, control group). Patients with newly inserted cases after ureteroscopic lithotripsy were included. HA/CS or normal saline was injected into bladder after ureteroscopic lithotripsy. Patients completed Urinary Stent Symptom Questionnaire (USSQ) on the post-operative seven day just before to perform ureteral stent removal. The questionnaire included questions regarding urinary symptoms, general health, body pain, and work and additional treatments for ureteral stent discomfort.

Results: Among 92 initial participants, 46 patients in group I and 46 patients in group II had completed the experiment (49 men and 43 women). Mean age was 45.7 vs 44.6 years (p = 0.669). The mean stent indwelling time in both groups was 7.6 and 7.7 days (p=0.56). Total USSQ score was observed superior effect in group I (p<0.001). Between the two groups there was shown significant difference in urinary symptoms (p<0.001) and urinary symptom related quality of life (p=0.018). Moreover, there were significant differences in VAS (p<0.001), total pain discomfort scores (p=0.01), pain discomfort by urinary tract infection (p=0.01), needs for antibiotics (p<0.01) and hospital visit (p<0.01).

Conclusions: Highly concentrated HA/CS was shown positive effect not only on urinary symptoms but also in pain relief. And it also helped preventing additional needs for medication or procedures due to stent indwelling.

UP.030

Emerging Roles of Hypoxia-Induced Angiopoietin-Like Protein 4 in Human Prostate Cancer

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Introduction and Objective: Here we examined the biological and clinical relevance of angiopoietin-like protein 4 (ANGPTL4) expression in prostate cancer. ANGPTL4 is a multifunctional protein, with roles in

glucose and lipid metabolism, inflammation, angiogenesis, and tumorigenesis. Recent research suggests that ANGPTL4 is a useful diagnostic or prognostic marker for various cancers. However, it remains unclear whether ANGPTL4 expression influences prostate cancer.

Materials and Methods: We examined ANGPTL4 expression in the prostate cancer cell lines LNCaP and LNCaP/CH incubated at 1% O2 for at least 6 months. We used quantitative real-time reverse-transcription polymerase chain reaction and western blotting to detect the level of ANGPTL4 mRNA and protein expression, respectively. We used enzyme-linked immunosorbent assay to measure ANGPTL4 secretion in the culture medium of the cell lines. In addition, we investigated the effect of various concentrations of recombinant ANGPTL4 protein on cell proliferation and intracellular signaling pathways. Moreover, we used ANGPTL4 knockdown by RNA interference to investigate the influence of ANGPTL4 expression on these cell lines. Finally, we investigated the correlation between ANGPTL4 expression in prostate cancer specimens and clinicopathological parameters using immunohistochemistry.

Results: In LNCaP/CH cells, the expressions of ANGPTL4 mRNA and proteins were more upregulated than those in LNCaP cells. In addition, ANGPTL4 secretion in the culture medium was significantly upregulated, and recombinant ANGPTL4 proteins significantly accelerated cell proliferation. Western blotting revealed that Akt phosphorylation was upregulated in the cells. Moreover, ANGPTL4 knockdown significantly suppressed cell growth and migration. A multivariate analysis showed that positive ANGPTL4 expression was an independent prognostic indicator of biochemical recurrence (p = 0.03, Hazard ratio = 2.02).

Conclusion: Our results show that ANGPTL4 is induced by hypoxia and promotes cancer progression via the activated PI3K/Akt pathway. Moreover, ANGPTL4 can be used as a prognostic marker for prostate cancer patients undergoing radical prostatectomy.

UP.031

Estrogen Receptor Beta Modulates Androgen Receptor-Driven Prostate Carcinogenesis and May Present a Therapeutic Target

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Introduction and Objective: Estrogen receptor beta (ERb) is a putative tumour suppressor, which interacts with androgen receptor (AR) to influence prostate cancer (PC). However, the mechanisms of these effects, and the relationship between ERb and AR are not well characterised. ERb is an attractive therapeutic target, as selective estrogen receptor modulators are already approved for clinical use. We investigated ERb to determine its relationship with AR, and establish whether it could be targeted in early disease.

Materials and Methods: A published gene expression dataset (CamCaP) was interrogated for correlation between ERb expression and clinical outcome. A PC cell line treated with silencing RNA (siRNA) to AR and a prostate tissue microarray (TMA) of radical prostatectomy (RP) specimens from men who received LHRH antagonist (Degarelix) prior to surgery were examined to investigate the relationship between AR and ERb expression. ERb/AR cross-talk was studied using a cell line model with inducible ERb expression, treated with androgen (R1881) and/or ERb-selective estrogen (3b-adiol). The effects on cell proliferation, gene expression (RNA-sequencing) and DNA-binding (ChIP-sequencing) were tested.

Results: Significant variability in ERb (ANOVA p = 0.04) expression was noted across the CamCaP prognostic groups, but in general, ERb gene expression was associated with favourable prognosis. Patients treated with degarelix prior to RP showed a trend towards increased ERb expression, suggesting that ERb is downregulated by AR. Similarly, siRNA to AR in LNCaP cells resulted in upregulation of ERb expression (p = 0.03). Using the LNCaP-ERb inducible cell line we created, we found that ERb activated by 3b-adiol in the presence of androgen-stimulated AR, inhibited cell proliferation and downregulated androgen-regulated genes, suggesting that active ERb is antagonistic to AR. We identified a set of DNA-binding sites shared by ERb and AR, suggesting that this antagonism occurs through competition for DNA binding sites.

Conclusions: ERb is a tumour-suppressor gene, the expression of which is negatively regulated by AR signaling in early PC. We uncover an antagonistic relationship in prostate cancer cells whereby sustaining or replacing ERb may inhibit tumour growth through down-regulation of AR-target genes. In future, an ERb-selective compound may be used to slow or abrogate progression in early disease.

UP.032

Is Thiol/Disulphide Homeostasis Important in Prostate Cancer Diagnosis?

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Introduction and Objective: Thiol/Disulphide homeostasis has critical roles in antioxidant protection, detoxification, signal transduction, apoptosis and regulation of cellular signaling mechanisms as an indicator of oxidative stress. It is known that oxidative stress plays an important role in both the initiation and the progression of prostate cancer. In the present study we assessed the relationship between prostate cancer and Thiol/Disulphide homeostasis. To the best of our knowledge is this relationship analyzed in a clinical study for the first time in the literature.

Materials and Methods: After Ethics Committee approval (546/2015); 388 patients aged between 46-75 years who undergone transrectal ultrasound (TRUS) guided prostate biopsies in three different centers between July 2015-2016 owing to serum levels of PSA ≥ 2.5 ng/ml and/or abnormal digital rectal examination were involved in this study. The plasma levels of Thiol/Disulphide homeostasis parameters (Thiol, Total Thiol and Disulphide) were compared in patients with and without prostate cancer.

Results: The mean age of the patients was 62.9±7 years. In patients with prostate cancer (n=130, 33.5%) the mean plasma levels of Thiol and Total Thiol were lower (332.9 vs 362 µmol/L and 363 vs 392.6 µmol/L, p<0.001) (Table 1). Patients with Gleason score ≥7 (45.4% of patients with prostate cancer) had lower plasma Thiol levels than patients with Gleason score 6 (321.3 vs 342.6 µmol/L, p=0,029). However, there were no statistically significant differences between plasma total Thiol and Disulphide levels (pTotal Thiol = 0.064 and pDisulfide = 0.933).

Conclusions: Patients with prostate cancer and high Gleason score had lower plasma levels of Thiol. Plasma Thiol as one of Thiol/Disulphide homeostasis parameter could be an important biomarker in prostate cancer diagnosis. We believe that our results should be supported by further studies.

UP.032, Table 1. Levels of Thiol/Disulphide Homeostasis Parameters in Patients with Prostate Cancer and Benign Prostate Hyperplasia (BPH)

Parameter	Prostate Cancer	(n=130)	BPH	(n=258)	p value
Thiol (µmol/L)	332.9±65.1	(140.1-465.5)	362.1±68.1	(153-529.1)	<0.001*
Total Thiol (µmol/L)	363±68.5	(167.2–494.7)	392.6±68.	(184.7–557.4)	<0.001*
Disulphide (µmol/L)	15±8.7	(0.8–81.7)	15.3±6.2	(0.5–41.6)	0.180
Disulphide/Thiol (%)	4.7±3	(0.3–28.2)	4.4±2.2	(0.1–16.1)	0.665
Disulphide/Total Thiol (%)	4.2±2.1	(0.3–18)	4±1.8	(0.1–12.2)	0.665
Thiol/Total Thiol (%)	69.6±39.6	(0.8–99.4)	58.2±44.6	(0.8–99.7)	0.171

* T Test
The parameters are shown as mean±standard deviation

UP.033

Improvement of Damaged Cavernosa followed by Neuron-like Differentiation at Injured Nerves after Transplantation of Stem Cells Cultivated on the Nanofiber in Rats with Cavernous Nerve Injury

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Introduction and Objective: Nanofiber induces the up-regulation of myelination markers and the axonal outgrowth of peripheral neurons. Regeneration of major pelvic ganglia cells innervated to penile cavernosa can be used for improving damaged cells of penile cavernosa in the cavernous nerve (CN) injured rat model. This study was performed to examine the differentiation of human mesenchymal stem cells cultivated on the surface of nanofiber meshes (nano-hMSCs) into neuron-like cells around major pelvic ganglia (MPG) and the improvement of their innervating damaged corpora cavernosa after transplantation around MPG in rats with CN injury.

Materials and Methods: The synthesized polymer was electrospun in a rotating drum to prepare nanofiber meshes. hMSCs were prepared and confirmed. Eight week old male Sprague-Dawley rats were divided into 4 groups of 10 each, including group 1=sham operation, group 2= CN injury, group 3= hMSCs treatment after CN injury, group 4= nanofiber meshes treatment after CN injury and group 5= nanofiber meshes-hMSCs treatment after CN injury (nano-hMSCs). In group 4 and 5, nanofiber or nano-hMSCs covered the MPG. Erectile response was assessed by CN stimulation at 2, 4 weeks. Thereafter, penile tissue samples were harvested and examined using morphological analysis and immuno-histochemical stain against nerves (neurofilament), endothelium (CD31) and smooth muscle (smooth muscle actin).

Results: At 2, 4 weeks, transplantation of nano-hMSCs increased the neuron-like differentiation of mesenchymal stem cells more than hMSCs alone around MPG. Transplantation of nano-hMSCs increased the expression levels of cavernous neuronal, endothelial and smooth muscle makers more than hMSCs alone. At 2, 4 weeks, the group transplanted with nano-hMSCs showed higher erectile function than the group with hMSCs alone ($p<0.05$).

Conclusion: Increased neuron-like differentiation around the major pelvic ganglia after transplantation of stem cells cultivated on the nanofiber improved damaged penile cavernosa and repair erectile dysfunction in the rats with CN injury.

UP.034

Electrospun PLLA Nanofiber Scaffolds for Bladder Smooth Muscle Reconstruction

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Introduction and Objective: Urinary bladder may encounter several pathologic conditions that could lead to loss of its function. Tissue engineering using electrospun PLLA scaffolds is a promising approach to reconstructing or replacing the problematic bladder.

Materials and Methods: PLLA nanofibrous scaffolds were prepared utilizing single-nozzle electrospinning. The morphology and distribution of fiber diameters were investigated by scanning electron microscopy (SEM). Human bladder smooth muscle cells (hBSMCs) were isolated from biopsies and characterized by immunocytochemistry (ICC). Then, the cells were seeded on the PLLA nanofibers and Alamar Blue assay proved the biocompatibility of prepared scaffolds. Cell attachment on the nanofibers and also cell morphology over fibrous scaffolds were observed by SEM.

Results: The results indicated that electrospun PLLA scaffold provides proper conditions for hBSMCs to interact and attach efficiently to the fibers. Alamar Blue assay showed the compatibility of the obtained electrospun scaffolds with hBSMCs. Also, it was observed that the cells could achieve highly elongated morphology and their native aligned direction besides each other on the random electrospun scaffolds and in the absence of supporting aligned nanofibers.

Conclusion: Electrospun PLLA scaffold efficiently supports the hBSMCs growth and alignment and also has proper cell compatibility. This scaffold would be promising in urinary bladder tissue engineering.

UP.035

Effects of Castration and Testosterone Replacement in Plasmatic and Prostatic Serotonin

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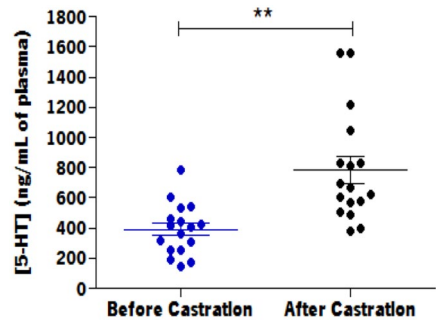
Introduction and Objective: Benign Prostate Hyperplasia is an elevated prevalence disease, with enormous impact in patient's quality of life. Its etiology still remains unknown, despite the accepted impact of aging and testosterone (TES) in its pathophysiology. Recent studies described how serotonin (5-HT) inhibits benign prostate growth through modulation of the androgen receptor in the presence of TES. The aims of this work were to determine the effects of castration and TES replacement in 5-HT plasmatic and prostatic regulation.

Materials and Methods: C57BL/6 mice were submitted to surgical castration and divided into 3 groups, continually exposed to vehicle or to different TES doses, during 14 days. 5-HT plasmatic concentration was measured before, after castration and after TES reintroduction. Finally total prostatic weight and inter-prostatic 5-HT levels were determined in the different groups.

Results: Our results demonstrate that mice prostate exhibits a high 5-HT concentration and that 5-HT intra-prostatic amount was similar in all studied groups, being independent of castration or TES reintroduction. Also, 5-HT plasmatic concentration levels significantly increased after castration, having normalized after TES administration.

Conclusion: Our results demonstrate that mice prostate has a high 5-HT concentration and that its amount is regulated independently of androgens action. On the other hand, castration induces a signif-

UP.035, Figure 1.



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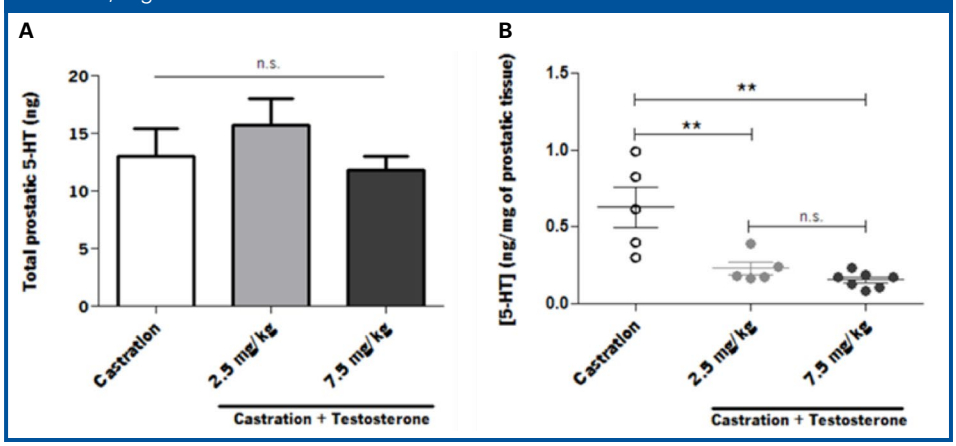
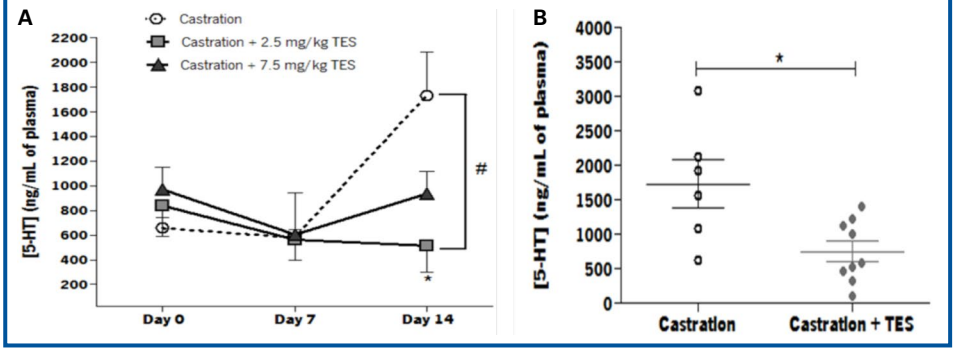


UP.035, Figure 3.



icant increase in 5-HT plasmatic concentration, raising the hypothesis that androgens might regulate the production of extra-prostatic 5-HT.

UP.036

Impact of Thyroid Hormones on Serum Prostate Specific Antigen Level in Patients with Benign Thyroid Disorders

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Introduction and Objective: In the present study, we determined whether the level of serum prostate specific antigen (PSA) varies with thyroid hormones in patients with benign thyroid disorders.

Materials and Methods: The study involved 50 male patients with a mean age of 56.7±9.9 (40-75) years who had benign thyroid disorders. All the patients were referred to our clinic by Endocrinology and Metabolism Clinic. The patients were divided into two groups. Group 1 consisted of 19 patients with hypothyroidism and Group 2 consisted of 31 patients with hyperthyroidism. Before the medical treatment, serum PSA levels were measured. Then, medical treatment was started by Endocrinology and Metabolism Clinic and continued until normal thyroid hormone levels were reached. Four weeks after the normalisation of the thyroid hormone levels, we measured serum PSA levels once again. Pre and post-treatment serum PSA, thyroid-stimulating hormone (TSH), free T3 and free T4 levels were assessed in the groups. T-Test and Paired Samples T-Test were used for statistical analysis.

Results: Serum PSA and thyroid hormone levels before and after treatment were summarized in Table 1. Pre-treatment serum PSA levels were lower in Group 1 than Group 2 (1.5 ng/ml vs. 2.6 ng/ml, p=0.030). Group 1 had lower post-treatment serum PSA levels than Group 2. However, the difference was not significant (1.7 ng/ml vs 2.5 ng/ml, p=0.150). No differences were found between the mean serum PSA levels in each group (Table 1). Also, serum PSA alterations were not statistically significant in Group 1 and 2 (0.17 vs. -0.24, p=0.265).

Conclusions: Our results show that serum PSA levels tend to be lower in patients with hypothyroidism compared to those with hyperthyroidism. Medical treatments of benign thyroid disorders do not impact on serum PSA levels. We believe that studies with large number of patients are needed to support our findings.

UP.037

EphrinB1 Up-Regulated by Slug Promotes Migratory and Invasive Behavior in Chronic Hypoxia Lncap Human Prostate Cancer Cells

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Introduction and Objectives: Tumor hypoxia is a common feature in a variety of cancers including prostate cancer and is associated with malignant progression. However, most of the previous studies on tumor hypoxia were performed under short-term hypoxia for up to 72 hours. Few studies have focused on tumor response to chronic hypoxic condition. The purpose of this study was to analyze tumor cell migration and invasion under chronic hypoxic condition compared with normoxia and acute hypoxia.

Materials and Methods: The human prostate cancer cell line LNCaP was cultured under normoxia (21% O2), acute hypoxia (1% O2 for 48 hours), or chronic hypoxia (1% O2 for 6 months). Cell migration and invasion were assessed using transwell chamber and matrigel coated transwell chamber assay, respectively. The expression of Slug (SNAI2), EphrinB1 (EFNB1) and key epithelial-to-mesenchymal transition (EMT) genes was investigated by gene expression array, RT-qPCR and western blotting. We used siRNA to knockdown of Slug and EFNB1, and used Lentivirus to overexpression of EFNB1. The luciferase reporter assay was used to evaluate whether Slug regulated EFNB1. Immunohistochemistry was performed to analyze the expression of Slug and EFNB1 in specimens from prostate cancer patients.

Results: Tumor cell migration and invasion were significantly increased under chronic hypoxic condition compared with normoxia and acute hypoxia. Of major EMT genes, the expression of Slug was specifically up-regulated in chronic hypoxia and knockdown of Slug suppressed tumor cell migration and invasion, but the EMT process was not activated. We focused on EFNB1 as a Slug-induced and chronic hypoxia-induced gene associated with cell migration and invasion. Knockdown of EFNB1 inhibited cell migration and invasion in chronic hypoxia and overexpression of EFNB1 increased it. Luciferase reporter assay showed that Slug activated the transcription of EFNB1 by binding E-box elements. Furthermore, whereas both Slug and EFNB1 expression were detected in specimens with prostate cancer, neither was expressed in prostate normal tissue.

Conclusions: Our findings suggest that chronic hypoxia-induced Slug promotes cell migration and invasion in an EMT-independent manner. EFNB1 up-regulated by Slug is responsible for this invasive behavior.

UP.038

Urinary NGF in OAB after Anticholinergics Treatment

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Introduction and Objective: Nerve growth factor (NGF) is a neuropeptide involved in the proliferation and regulation of growth, and survival of certain target neurons. It is easily identified in urine. In our previous studies, urinary NGF was more expressed in several conditions with bladder irritation. In this study, we investigated the changes of urinary NGF expression in overactive bladder (OAB) patient depending on anticholinergics treatments responses.

Materials and Methods: Subjects were divided into two groups; healthy female without no known urologic problems as a control group (n=52, 50.46±9.98 (34~77) years old), and OAB female patients as an OAB group (n=50, 53.2±15.88 (24~77) years old). In OAB group, urine sample was collected from catheterized urine before and two months after the antimuscarinic treatment. Collected urine was centrifuged at 5000rpm then NGF level in the supernatant was measured by ELISA method.

Results: Urinary NGFs were different with statistical significance (pre-treatment OAB 1.57±0.25 (1.1~2.19)

UP.036, Table 1. Comparison of Pre-Treatment and Post-Treatment Levels of Serum Total PSA, TSH, Free T3 and Free T4 Levels

Parameter	Group 1			Group 2		
	Pre-treatment	Post-treatment	p value	Pre-treatment	Post-treatment	p value
PSA (ng/ml)	1.5±1.6	1.7±1.7	0.142	2.6±3.1	2.5±3.8	0.526
TSH (µIU/mL)	24.5±34.7	4.1±1.2		0.1±0.1	1.7±1.5	
Free T3 (pg/ml)	2.8±0.5	3.1±0.3		5.5±4.5	3.1±0.6	
Free T4 (ng/ml)	0.6±0.3	0.9±0.2		1.9±1.3	0.8±0.1	

The parameters are shown as mean±standard deviation

ng/ml; post-treatment OAB 1.29±0.23 (0.9~1.7)ng/ml; control 0.59±0.23(0.06~0.99)ng/ml, p=0.0000, ANOVA). In OAB group, urinary NGF was elevated compared with control group (p=0.000, paired t-test), and it was significantly decreased with antimuscarnics treatment (p=0.0002, paired t-test). Presence of lower abdominal discomfort, pain, frequency, nocturia, urgency, and urinary incontinence did not show any significant correlations between urinary NGF expressions.

Conclusion: Urinary NGF is elevated in OAB compared with normal bladder. Anticholinergics treatments lower the urinary NGF. Urinary NGF changes combined with antimuscarinic treatment may represent the treatment responsibility of OAB. This may provide a prognostic factor of medical treatment in OAB for deciding next step of treatment.

UP.039

Induction of Akt in Urinary Exosome by Bacterial Infection

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Introduction and Objective: Urinary tract infection (UTI), one of the most common bacterial infections, is treated by antibiotics and the prognosis is good in most cases except specific patients (infants, pregnant women, the elderly and patients with complications). Bacterial infection induces activation of intracellular signaling pathways through the interaction between bacterial factors and host cell receptors (e.g. lipopolysaccharide and toll like receptor 4). Exosomes are membrane vesicles with a diameter of 40-150 nm and carry various molecular constituents such as proteins and nucleic acids that are contained in cells from which they are derived. Thus, exosomes are expected to serve as a diagnostic marker for various diseases. Since exosomes are also secreted from cells infected with bacteria, urinary exosome analysis may be useful for understanding of mechanisms in UTI. In the present study, we investigated the expression changes of Akt (protein kinase B) in urinary exosome, one of signaling molecules that is activated by LPS.

Materials and Methods: Exosomes were isolated by ultracentrifugation from the culture medium of SV-HUC-1 (immortalized uroepithelium cell line) and THP-1 (acute monocytic leukemia cell line) cells that were co-cultured with or without E. coli. Urinary exosomes were collected from patients during UTI and after treatment. The expression level of Akt was analyzed by western blot. Isolation of exosomes was confirmed by western blot for CD9.

Results: Akt expression was increased in exosomes isolated from both cells that were co-cultured with E. coli when compared with those without E coli. Akt was also detected in the urinary exosome fractions separated by density gradient ultracentrifugation that were positive for CD9. Exosomal Akt expression was higher in urine from patients with UTI than in post-treated urine.

Conclusion: There has been no report that described expression changes of signaling molecules in urinary exosome in response to bacterial infection. Our results suggest the potential role of urinary exosome analysis as a tool for understanding mechanisms of UTI.

UP.040

Bioengineering Smooth Muscle Cell Sheets for the Treatment of Hypoactive Bladder Dysfunction

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Introduction and Objectives: Cell therapies involving differentiation of smooth muscle cells offer alternative treatment modalities for diseases that involve smooth muscle cells (SMCs) pathology involving the urogenital organs. Adipose derived stem cells (ADSCs), being easily and efficiently harvested with considerably less donor morbidity, represent ideal source for cellular treatment. The aim of our study was to investigate whether ADSCs can be differentiated into SMCs and whether these differentiated cells can be delivered into various forms including dissociated cells, cell sheets and cell seeded scaffolds.

Materials and Methods: Human ADSCS harvested using enzymatic method. They were induced to SMCs with differentiation culture media containing human (Transforming Growth Factor β1 (TGF- β1) in thermosensitive cell culture dishes. The growth and characteristics of the cells were followed for 3 weeks. The induced cell sheets were harvested by lowering the temperature at different weekly for 3 weeks. The cell sheets were stained with H&E and Masson Trichrome and checked for smooth muscle actin, calponin and collagen IV.

Results: The cells sheets could be detached easily intact by lowering the temperature. The sheets were formed of 2-4 layers of cells that showed positive staining for smooth muscle markers. They also showed positive staining for collagen VI indicating the formation of extracellular matrix.

Conclusion: These results showed the ability of ADSCS to form SMCS and form renewable source for the treatment of hypoactive bladder. Differentiated SMCs cell sheets are a viable technique for retaining the delivered stem cells at the site of application in bladder pathologies.

UP.041

Development of A Tubular Construct for Urethral Reconstruction Using a 3D Printing Approach

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Introduction and Objective: 3D printing creates real objects using 3D computer-designed models. In our study we made hollow tubes using a biomedical thermoplastic polymer to mimic the structure of the Urethra. Fused deposition modeling (FDM) 3D printers were used for the additive manufacturing process.

Materials and Methods: Blender® software was used to design 3 different images of hollow tubes similar to the structure of the urethra. The first model had a single non porous lumen. The Second was bilaminar with an outer porous layer. The third was trilaminar with an intervening corpus spongiosum like pattern. Biomaterials used were thermoplastic polyurethane (TPU) filaments. Sharebot® 3D printer received the images and extruded the filaments using dual heads. Mechanical properties such as stress strain and suture retention were tested accordingly.

Results: The Printed tubes were analogous to the computer images. However, thin hairy filaments were noticed on the inner surface. Scanning electron micoscopy revealed a haphazard pattern with loss of pore geometry. Scaffold samples were stretched by 340.7 ± 9.823 % with a maximum stress of 210 ± 24.72 N. The constructs were compressed to 1/3 of their diameter by 2.31 ± 0.02 N. Lastly, a mean of 3.579 N load was needed to tear a 5/0 Vicryl suture from the printed tubes.

Conclusion: Our results have shown that FDM 3D printing is a rapid and simple way of prototyping tube models mimicking the urethra. However, mechanical properties did not match the native urethra. Therefore, we recommend using a softer hybrid material for urethral reconstruction.

UP.042

In Vitro Fabrication of a Biomimetic Tube Model for Urinary Diversion Using a Synthetic Polymer and Autologous Cells

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Introduction and Objective: Several lower Urinary tract pathologies result in high pressure voiding. Patients require a self catheterizable conduit for CIC. The Appendix and Ileum are commonly used, but often result in patient morbidity. Aim of our study is to develop a tissue engineered biocompatible tubular construct using a synthetic elastomer seeded with autologous cells for safe and easy catheterization.

Materials and Methods: A scaffold tube using poly (carbonate-urea) urethane (PCU) functionalized with L-Arginine Methyl Ester (L-AME) particles were used. LAME-PCU was casted to produce a 10 cm long, 8mm wide tubes. Mechanical properties including tensile strength, burst pressures and suture retention were assessed. Cell seeded grafts were fabricated using Human Dermal Fibroblasts (HDFs). Fluorescence microscopy and Alamar blue fluorescent assay were used to characterize and track the metabolic behavior of HDFs respectively.

Results: Scanning electron microscopy (SEM) revealed a honey comb highly porous structure. Maximum stress applied to the scaffold was 25.17± 3.619 MPa with a strain to break at 314.3 ± 6.197%. The tubes resisted burst pressures up to 1028 mmHg. A mean of 2.852 N load was needed to tear a 5/0 PDS suture from the construct. The Alamar blue assay curve confirmed high HDF viability. Fluorescence imaging

demonstrated HDF attachments to all scaffold samples with normal cellular morphology.

Conclusion: Our initial results reveled that LAMEPCU is a biocompatible, mechanically stable scaffold which can function as a tubular construct for continent catheterization. Further studies would involve Co-culture with urothelial cells as well as in Vivo testing in a large animal model.

UP.043

Development of a Wearable Assistive Device for Bladder Monitoring Using NIRS and Ultrasound Technology

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Introduction and Objective: Neurogenic bladder dysfunction (NBD) is a major cause to the morbidity and mortality to subjects with spinal cord injury (SCI) who commonly have voiding dysfunction and loss of bladder fullness sensation. Bladder emptying with clean intermittent catheterization (CIC) is currently available measure to maintain urologic health with low urinary tract complication. However, patients have to rely on regularly scheduled urination to avoid overload in the bladder which greatly influence their quality of life (QOL). Although ultrasound techniques have been utilized to measure bladder volume in clinical with professional manipulation and in laying position, there is currently no effective way to monitor bladder in low-pressure storage and continuous monitoring for homecare and in different posture constraints. Our study aims are to develop an assistive device for non-invasive and ambulatory urodynamic monitoring in various posture positions (e.g. siting in wheelchair condition) based on wireless near infrared spectroscopy (NIRS) and miniature ultrasound sensing techniques.

Materials and Methods: A wearable NIRS module using optoelectronic method for measuring the changes in chromophore concentration related to oxygenation and hemodynamic changes in real time. This NIRS approach is particularly useful when the underlying pathology related to a disorder of oxidative metabolism or hemodynamics involving the bladder and or urinary sphincter. Ultrasound and inertial sensors will be utilized to measure the distance between abdominal with bladder urine which is useful for easy positioning.

Results: Figure 1

Conclusion: The proposed measurement ultrasound positioning and non-invasive NIRS bladder hemodynamic measurement devices can be firstly validated in clinical setup for human healthy and SCI subject as a means of ambulatory monitoring of voiding. With recruitment of a SCI subject dedicating for this device, the developed device is designed for the needs of SCI subjects which not only will be validated in clinical setup but also tested for daily homecare toward optimal urination with CIC of SCI subjects.

UP.044

Quercetin as a New Regulator of the Potassium Channels in an Overactive Bladder

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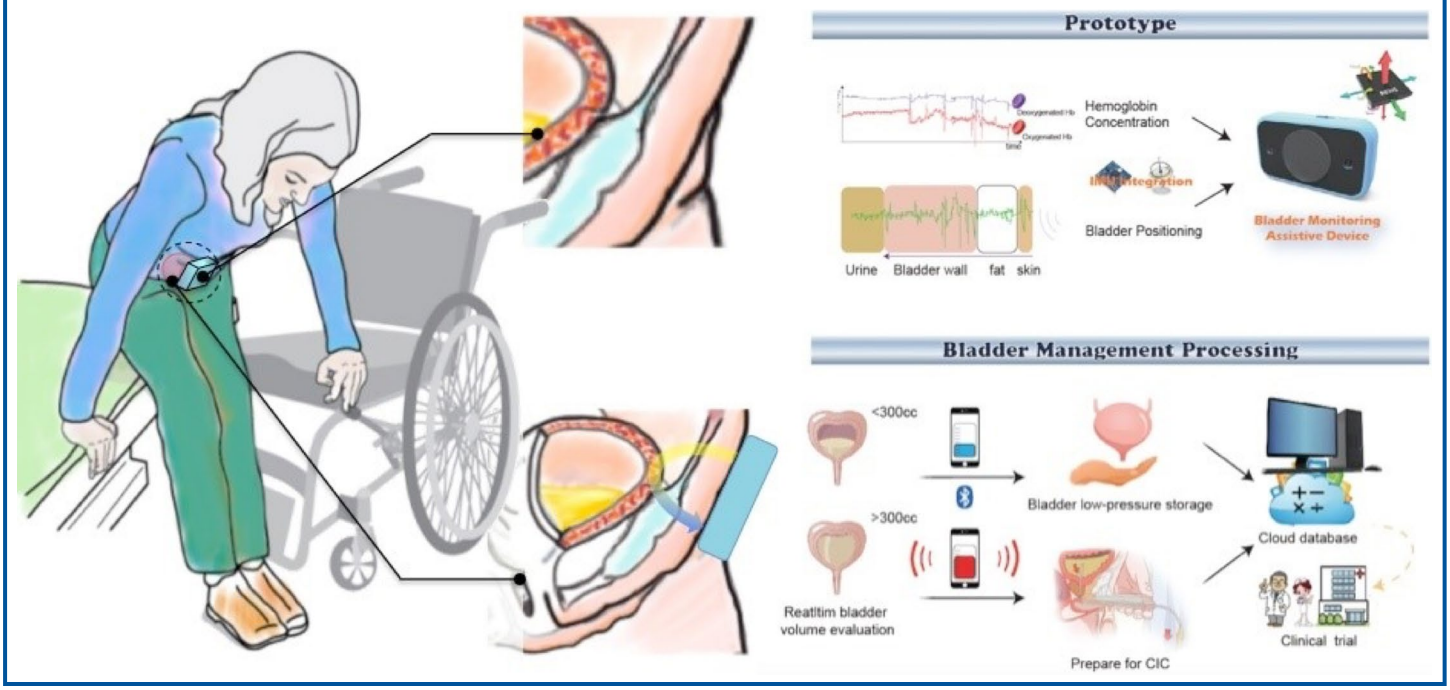
Introduction and Objective: Overactive bladder disease is characterized with nocturia, frequency, urgency, often with incontinencethat worsening the comfort of patients' life. Nowadays it is known that overactive bladder associated with a malfunction of neurons, smooth muscle and urothelium, but the mechanism of this dysfunction remains unclear. However, it probably might be due to BKCa channelopathy in bladder smooth muscle.

Materials and Methods: Using the method of patch clamp we compare the characteristics of potassium current in smooth muscle cells of healthy Wistar line rats and rats with an overactive bladder model, clarify the role of BKCa channels in the bladder and propose the pharmacologicalcorrection of these channels by liposomal quercetin.

Results: We have shown a significant decreasing of the potassium current density in smooth muscle cells of the rats with overactive bladder, from 168.7 ± 5.8 pA/pF in control to 65.7 ± 12.3 pA/pF in the model. Selective blocker of BKCa channels paxilline reduced potassium current about half, indicating significant functional expression of these channels and their important role in the regulation of bladder contractile activity. An perspective activator of BKCa channels, liposomalquercetin, increased current density in model rats from 32.7 ± 0.9 pA/pF to 53.1 ± 2.7 pA/pF.

Conclusion: Overactive bladder disease is associated with channelopathy of potassium channels, particularly with BKCa channels and their suppressed function can be partially restored by liposomal quercetin.

UP.043, Figure 1.



UP.045

Distribution of the Detrusor Muscle and Interstitial Cells in a New Rat Model of Overactive Bladder

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Introduction and Objective: Stress urinary incontinence (SUI) is a common problem in postmenopausal women. Overactive bladder (OAB), defined by the International Continence Society as urgency with or without urinary incontinence, usually associated with frequency and nocturia. The mechanisms behind the development of detrusor overactivity have not yet been fully clarified. In the last years there is a growing interest in the interaction between the interstitial cells of Cajal (ICCs) and smooth muscle cells (SMA) in the bladder wall. We worked up a modified animal model for SUI which allows the evaluation of chronic SUI on lower urinary tract function. The purpose of this study is to compare the distribution of SMA and ICCs in normal bladder and bladders after injection of Homviotensin and their possible involvement in the pathogenesis of OAB with SUI.

Materials and Methods: Experiments on the reproduction of the overactive bladder model was conducted on mature white Wistar line rat females weighing 300 g with permission of the local ethics committee. The animals were divided into two groups. The first group was a control line rats were injected with 0.3 ml of sterile Saline daily for 14 days. Animals of the second experimental group once a day for 14 days were injected intravenous 0.3 ml of the drug solution, Homviotensin that contained 0.45 mg of Reserpinum D3. SUI was determined by the sneeze test using a rat whisker inserted into the nostril to induce sneezing after 2 weeks. Full-thickness bladder specimens were obtained from 20 rats with OAB and 5 controls, and processed as paraffin-wax. The slides were stained with hematoxilin-eosin and van Gieson's. Sections were assessed using single immunohistochemistry with monoclonal and polyclonal anti- CD117 (c-Kit) antibodies (Dako) and. anti-alpha-smooth muscle actin (SMA) antibody (Dako) Morphometric evaluation was carried out with the help of image analysis software (Quick PHOTO MICRO 2.3), the slides were analyzed and photographed with a light microscope (Olympus BX41™). The results were expressed as the mean ± the standard error of mean. Differences were considered significant at $p<0.05$.

Results: In the group with OAB, histological findings showed decreased thickness of urothelial/basal layer of urothelium and hypertrophy detrusor smooth muscle in 96 % of experimental animals, where ICCs were predominantly distributed. In the OAB with SUI group compared to the control, the histology of bladder tissue showed relative thinning of the epithelium and atrophic change. ICCs were detected in the lamina propria in 65% and within and adjacent to smooth muscle bundles in70% of rats. Interstitial cells were markedly increased in the OAB as visualized on staining with CD-117 (c-kit) and as a rule locate around SMC. SMA staining showed marked hypertrophy of the muscle bundles in OAB. One of the most common morphological features in OAB was hydropic changes or vacuolization of the SMC. alpha-SMA immunoreactivity was lower in the areas of vacuolization than in control sections.

Conclusion: The reproduction of the model was confirmed by histological studies. This model comparing to others is cost effective. On the basis of these findings, we hypothesize that the ICCs are involved in some way in generating or regulating the phasic activity and might be involved in the physiology of detrusor overactivity induced by Homviotensin. Furthermore, the characteristics of a heterogenous population of ICCs that surrounding SMC with distinctive lesions of the bladder wall including lamina propria and detrusor muscle requires much research.

UP.046

Modulation of Connexin 43 Expression by Histone Acetylation Dependent Mechanisms in Human Bladder Smooth Muscle Cells

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Introduction and Objectives: We investigated the role of a histone acetylation dependent mechanism in the transcriptional repression of Cx43 in cultured human bladder smooth muscle cells (HBSMCs). Expression of connexin43 (Cx43) increases in the bladder smooth muscle cells of patients with overactive bladder.

Materials and Methods: Expression of Cx43 mRNA was assessed by RT-PCR and qPCR after treatment of HBSMCs with either the histone deacetylase (HDAC) inhibitor, trichostatin A (TSA) or the histone acetyltransferase (HAT) inhibitor, anacardic acid. Modulation of histone acetylation and recruitment of the transcription factors AP-1 and Sp1 at the Cx43 promoter region in response to TSA or anacardic acid (AA) was analyzed by chromatin immunoprecipitation (ChIP) assay.

Results: While the treatment with TSA promoted the expression of both the Cx43 mRNA and protein in HBSMCs, the expression of both the Cx43 mRNA and protein were suppressed in the presence of anacardic acid, compared to the levels in the untreated cells. ChIP assays confirmed that TSA-induced transcriptional up-regulation of Cx43 in HBSMCs was associated with increases in the accumulation of acetylated histones H3 and H4 accompanied with the enrichment of accessible AP-1 and Sp1 in the critical promoter region of the Cx43 gene. On the contrary, ChIP assay after treatment with anacardic acid showed that repression of Cx43 in HBSMCs was associated with decreased acetylation levels of histone H3 and H4 accompanied with subsequent reduction in the binding of AP-1 and Sp1.

Conclusions: Our finding suggested that TSA-mediated induction and anacardic acid-mediated reduction of Cx43 expression in HBSMCs might be associated with the histone acetylation dependent mechanism linked to the transcription factors AP-1 and Sp1 in the Cx43 promoter.

UP.047

Analysis of Resistance-Related Genetic Expression in Docetaxel-Resistant Prostate Cancer Cells

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Introduction and Objective: Docetaxel based chemotherapy is the standard first line regimen in prostate cancer. However, many of those who receive docetaxel are refractory to docetaxel or develop docetaxel resistance. The underlying mechanisms about docetaxel resistance has not been clarified until now, which has worked as big burden in management of prostate cancer.

Materials and Methods: In the present study, we established docetaxel-resistant cell line and analyzed the differential gene expression between docetaxel-sensitive (PC3) and docetaxel-resistant prostate cancer cell line (PC3DR2) using microarray and RT-PCR.

Results: Total 17,084 genes were analyzed and we identified that 1227 genes were 2-fold upregulated while 1190 genes were downregulated using n-fold method after regression normalization. When fold change value was 3, the upregulated genes were 392 while downregulated genes were 243. Revering to microarray results, we try to confirm the microarray results using RT-PCR. Microarray analysis and RT-PCR revealed that IGF1R, DBF3, ZAK, PTCH1, SERPINE, and BRCA2 that are involved in cancer pathway showed over 3 fold increase in PC3DR2 compared to PC3. To elucidate the role of BRCA2 in docetaxel resistance, siRNA on BRCA2 was transfected into PC-3DR2 and we found that BRCA2 knock down reduced the docetaxel resistance in PC3DR2.

Conclusions: Our results suggest that BRCA2 play an important role in the docetaxel-resistance of prostate cancer cell. In addition, BRCA2 modulation may, at least partially, reverse docetaxel resistance in prostate cancer. However, to clarify this suggesting, the further study will be required *in vivo* model.

UP.048

The Rhesus Monkey (Macaca Mulatta) Penis as an Experimental Model for Sexual Medicine Studies

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Introduction and Objectives: Erectile dysfunction has been studied using the penis of different animals, with more or less similarities to the human penis characteristics. We aimed to characterize the main components of the corpora cavernosa of Rhesus Monkey penis as a model for experimental studies in erectile dysfunction.

Materials and Methods: We studied ten penis of adult Rhesus Monkey. The penises were transversally sectioned at the mid-shaft and fixed in 4% buffered formalin. After fixation for 24 to 48 h the samples were processed for paraffin embedded. The analysis was

done in 5µm thick sections and stained with histochemical methods: hematoxylin and eosin, Masson's trichromic, Weigert resorcin-fucsin for elastic system fibers. Also, we used imunohistochemistry with the following anti-bodies: anti alpha-actin and anti-elastin.

Results: The corpora cavernosa were involved by a thick tunica albuginea with 798 µm. The corpora cavernosa components showed the following values in percentages: connective tissue = 7.5%, smooth muscle fibers = 19% and elastic system fibers = 6%.

Conclusions: The knowledge of the anatomy of laboratory animal's is essential in experimental research. Due to phylogenetic proximity of Rhesus Monkey with man, the penis and prostate, only to name the urogenital system organs, are widely used in research. The present results showed that, besides the phylogenetic proximity, the corpora cavernosa of the Rhesus Monkey present similarities with the corpora cavernosa of the man. Therefore, we concluded that Rhesus Monkey would be a good model for experimental studies on the penis.

UP.049

Acellular Urethral Scaffold: Tissue Integration and Cryopreservation Effects

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Introduction and Objectives: Different tissues have been used for urethral repair. These substitutes have limitations compared to urethral tissue (UT). Acellular scaffolds from human urethras may be a suitable alternative. The objectives were to develop a decellularization method for UT, evaluate cryopreservation effects and biological response.

Materials and Methods: Seven urethral samples from male patients were used. 2 decellularization protocols in 2 periods (3 or 7 days) were analyzed: sodium deoxycholate 1% (PR1) and Triton X-100 1% (PR2). 2 freezing media with DMSO 0.7M (PRA) and 1.5M (PRB) were evaluated. Decellularization and structural integrity were assessed by histological analysis, β-actin WB, DNA levels and scanning electron microscopy (SEM). Extracellular matrix (EM) proteins (collagen I and IV, laminin, fibronectin and elastin) were studied by immunohistochemistry (IHC) and dot blot. To evaluate biological respond, scaffolds were implanted into the subcutaneous space of 8 week old male mice (2 BALB/c and 2 athymic nude). Mice were sacrificed after 3 weeks. The implants were fixed in formalin to histological analysis, immunofluorescence (cytokeratin and vimentin) and IHC of PCNA and VEGF.

Results: PR1 and PR2 applied for 3 days, maintained high cellular components, while PR2 applied for 7 days showed total decellularization, undetectable DNA and actin levels with high structural integrity evaluated by SEM. EM proteins were higher in PR2 than PR1. Comparing the 2 freezing protocols, PRA presented better integrity and protein levels than PRB. PRA/PR2 showed the highest levels of EM proteins and VEGF, even better than PR2 without freezing cycle. Mice implants showed no inflammatory responses with both decellularization protocols. Histological analysis showed high fibroblastic cells with the presence of some macrophages. Blood vessels assessed by VEGF were observed mainly in PR2 protocol. Vimentin and PCNA showed strong expression in infiltrating cells in both protocols.

Conclusion: These results indicate that PR2 used is successful to achieve a decellularized urethral with an intact native architecture and suggest that a freezing cycle promotes the UT integrity. Furthermore, PR1 and PR2 have high degree of tissue integration. Therefore, our results suggest that urethral scaffold from sex reassignment patients represents a feasible tissue for urethral repair.

UP.050

Quantitative and Qualitative Analyses of Stromal and Acinar Components of Prostate Zones

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Introduction and Objectives: The prostate has been divided into 3 different zones: central zone (CZ), peripheral zone (PZ) and transitional zone (TZ). Each one has its own and peculiar stromal and acinar components. The aim of this study is to quantify, by using computerized analysis, the different elements of the prostatic stroma for characterizing the structure of each region.

Materials and Methods: Nineteen samples were collected from different zones of the prostate obtained from autopsies of young men (less than 30-years old) who had been killed in accidents and whose post mortem examination showed no changes in the urogenital system. The time elapsed between death and fixation of the excised samples was less than 24h and during this period the subjects were maintained under refrigeration. Each sample was fixed in 4% buffered formalin and 5 sections of each fragment was made and processed to the following histochemical and immunohistochemical techniques. Quantitative analysis was performed by using Image J software. Statistical analysis was performed by using GraphPad Prism 6. Data were analyzed by one-way ANOVA and Bonferroni post-test, considering $p<0.05$.

Results: The qualitative analysis of the sections stained by Picrosirius Red and observed under polarized light showed a predominance of type-I collagen with homogeneous distribution in all regions. The quantitative analysis, in sections stained by Masson's trichrome, showed statistical differences. Collagen in PZ (22.70 ± 5.00) when compared with and TZ (31.84% ± 9.96), p=0.0230. Muscle fibers in the PZ (14.07% ± 4.72) when compared with TZ (20.69% ± 4.91), p = 0.0120. Epithelium height in the TZ (23.03 ± 5.58 µm) when compared with PZ (32.98 ± 6.16 µm), p=0.0034, and with CZ (30.71 ± 6.62 µm), p=0.0330. The quantitative analysis, in sections stained by Weigert´s showed the statistical difference of elastic system fibers in the TZ (23.15% ± 10.36) when compared with PZ (12.54% ± 3.04), p=0.0012, and with CZ (14.32% ± 3.65), p=0.0074. The quantitative analysis, in sections stained by immunohistochemical showed the statistical difference of nerves in the PZ (0.35% ± 0.16) when compared with CZ (0.20% ± 0.10), p=0.0109.

Conclusion: Our objective quantitative data on the different elements that constitute the normal prostate stroma allowed us to show the differences between prostatic zones. This study established the normal parameters patterns and may be used in posterior comparisons in hystopathological analysis.

UP.051

Expression of Cannabinoid 1 (CB1) and Cannabinoid 2 (CB2) Receptors and Effects of CB1/CB2 Receptor Agonists on Detrusor Overactivity Associated with Bladder Outlet Obstruction in Rats

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Introduction and Objective: To investigate changes in the expression of cannabinoid (CB1, 2) receptors and the effects of CB1 and CB2 agonists on detrusor overactivity (DO) associated with bladder outlet obstruction (BOO) in rats.

Materials and Methods: Male Sprague Dawley rats were randomly assigned to four groups (n=10, respectively). The control group comprised sham-operated rats. The animals in the BOO, CB1 and CB2 agonist groups all underwent BOO surgery. Three weeks postoperatively, cystometrography (CMG) was performed on all rats. After confirming the presence of DO in the CB1/CB2 agonist groups, CB1 receptor agonist (WIN 55,212-2) and CB2 receptor agonist (CB65) were instilled intravesically, and CMG was repeated. CMG parameters including the contraction interval (CI) and contraction pressure (CP) were then analysed. The bladders of the control and BOO groups were excised following CMG. Immunofluorescence staining and Western blotting was performed to localize and expression levels of CB1/CB2 in the urothelium and detrusor muscle.

Results: The CI was longer and the CP was lower in the CB1 agonist group than in the BOO group, significantly. These factors in the CB2 agonist group also demonstrated the same results. Signals of immunofluorescence staining and immunoreactive bands in Western blotting of the CB1 receptor were increased in the BOO group compared with the control group. Similarly, These of CB2 receptor were also increased in the BOO group, although this difference was not significant. The CMG parameters in the BOO group were significantly improved by the inhibitory effects of CB1 and CB2 receptor agonists on the BOO-associated DO. The expression of CB1 was significantly increased in the urothelium and detrusor muscle in BOO-associated DO, but no significant change in CB2 expression was observed.

Conclusion: CB1 and CB2 receptors, especially CB1, play a role in the pathophysiology of BOO-associated DO, and could serve as therapeutic targets.

UP.052

Different Energies, Different Results? The Balance between Efficacy and Safety: A Study in Porcine Ex-Vivo Models

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Introduction and Objectives: The technology of electrosurgery instruments has been one of the most important factors in the advancement of laparoscopy by reducing blood loss and reducing surgical times. There is ambiguity among surgeons in choosing the energy to use, making it imperative to define which of the instruments available is the most effective and safe.The objective of this study was to compare the effectiveness of sealing and safety between Hamonic®, EnSeal® and Ligasure™ in the lining of arteries and veins of different sizes in an *ex-vivo* porcine model.

Materials and Methods: The instruments were compared for cutting speed. After collection of the vessels, the burst pressure (BP) was evaluated. A group of vessels was sent for histological analysis for the evaluation of thermal damage and sealing. All instruments were used at a constant energy level (standardized by the brand), with Harmonic® being divided into maximum/minimum energy, totaling 4 groups of instruments.

Results: We tested a total of 248 vessels. Globally, Ligasure™ was the fastest in cutting all types of vessels, with Enseal® presenting as the slowest. There were no statistically significant differences between the BP of the 4 groups of instruments in any of the vessel types distributed by diameter, except in the group of medium arteries, with Ligasure™ generating significantly higher BP than the Enseal. In the medium arteries, the Harmonic® in minimal energy presented a greater percentage of failures, and Ligasure™ the smaller one. There was no statistically significant association between the number of failures and vessel size. There was a significant difference of failures in arteries versus veins, with greater number of artery failures in all instruments.

Conclusion: In this study, Ligasure™ demonstrated a faster and more reliable sealing, with BP superior than all other instruments in medium-caliber arteries and higher median of sealing length in both arteries and veins, although not statistically significant. However, Ligasure™ presented thermal damage significantly higher than Enseal® and a median higher than Harmonic® at minimum energy. This study also demonstrated that there is a significant rate of sealing failure, especially in larger vessels, which should be known for preventing complications.

UP.053

The Synergic Effect of Metformin and Everolimus in Renal Cell Carcinoma

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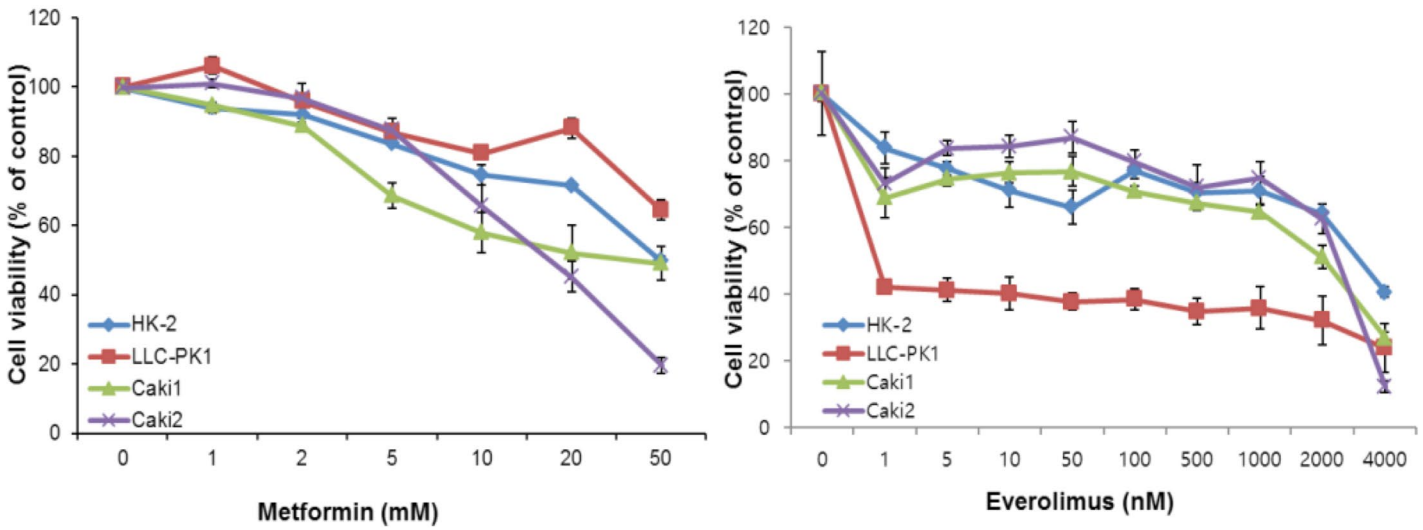
Introduction and Objective: To investigate the antitumor effect of metformin combined with everolimus on renal cell carcinoma cell lines.

Materials and Methods: The water-soluble tetrazolium salt (WST) cell viability assay and colony formation assays was performed to investigate the effects of metformin, everolimus and their combination on normal kidney epithelial cells (HK-2, LLC-PK1) and RCC (Caki1, Caki2) cell growth. Signaling molecules involved in mTOR signaling was analyzed by immunoblot analysis of various proteins including mTOR, AMPK, 4EBP1, p70S6K.

Results: WST cell viability assay showed that both metformin and everolimus reduced cell viability of normal kidney cells and renal cancer cells in a dose-dependent manner. And metformin combined with everolimus had a synergistic inhibitory effect in a dose-dependent manner. In Caki-2 cell, metformin combined with everolimus effectively inhibits colony formation. Metformin and everolimus inhibited mTOR down signaling molecules, AMPK, 4EBP1, p70S6K in Caki-2 cell. And these results were more

UP.053, Figure1.



(A) Metformin and everolimus inhibits normal kidney epithelial cells (HK-2, LLC-PK1) and RCC (Caki1, Caki2) growth. Cells were treated with metformin (0, 1, 2, 5, 10, 20, and 50 mM) and everolimus (0, 1, 5, 10, 50, 100, 500, 1000, 2000, and 4000 mM) for 72 hours and cell viability assay was performed. After 72h, WST was added to each well and incubated for 4 hours at 37°C. The absorbance at 450nm, 650nm was measured.

(B) Metformin combined with everolimus synergistically inhibits normal kidney epithelial cells (HK-2, LLC-PK1) and RCC (Caki1, Caki2) growth. Cells were treated with metformin (0, 1, 2, 5, 10, and 20 mM) and everolimus (0, 10, and 50 mM) for 72 hours and cell viability assay was performed. After 72h, WST was added to each well and incubated for 4 hours at 37°C. The absorbance at 450nm, 650nm was measured.

(C) Metformin and everolimus inhibits colony formation of Caki-2 cells. Metformin combined with everolimus synergistically inhibits colony formation of Caki-2 cell. Cells were seeded in 6-well plates in triplicate at a density of 200 cells/well with 10% FBS. . After 24 hours, cultures were replaced with fresh medium containing 5% FBS as control, or the same medium containing different concentrations of metformin, everolimus and their combination for 14 days at 37°C. The formed colonies were stained with a solution maintaining 0.5% crystal violet and 25% methanol, followed by washing with water to remove excess dye.

(D) Metformin and everolimus inhibits mTOR signaling in Caki-2 cells. Caki-2 cells were treated with 10 mM metformin and 10nM, 50nM everolimus for 72 hours and cell lysates were resolved by SDS-PAGE. Immunoblot analysis was carried out using antibodies against mTOR, phospho-mTOR, AMPK, phospho-AMPK (Thr172), 4E-BP1, phospho-4E-BP1 (Thr37/46), 70S6K, phospho-70S6K and β-actin.

maximized when metformin was combined with everolimus.

Conclusion: The study indicated the synergic antitumor effects between metformin and everolimus, which may be a prospective therapy strategy to achieve potent antitumor effects on renal cell carcinoma.

UP.054

Chemokine Receptors CXCR4 and CXCR7 are Associated with Tumor Aggressiveness and Prognosis in Extramammary Paget Disease

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Introduction and Objective: Chemokines are involved in many aspects of oncogenesis, including regulation of cancer cell growth, dissemination and host-tumor response. However, the potential of the chemokine receptors, CXCR4 and CXCR7, in serving as biomarkers in extramammary Paget's disease (EMPD) has been rarely examined.

Materials and Methods: Expressions of CXCR4 and CXCR7 were evaluated in 92 EMPD specimens by immunohistochemistry.

Results: High expression of CXCR4 and CXCR7 were both correlated with regional lymph node metastasis and presence of lymphovascular invasion. High expression of CXCR7 also correlated with the depth of invasion. The prognostic value of these two chemokines was also investigated in progression-free survival (PFS) and cancer-specific survival (CSS). Both high expression of CXCR4 and CXCR7 were indicative of shorter PFS and CSS. In the combined prognostic model, concomitant high expression of CXCR4 and CXCR7 were suggestive of poor prognosis compared with the other two groups. In the multivariate analysis, depth of invasion, combined prognostic model and regional lymph node metastasis at diagnosis were the independent prognostic factors for EMPD patients for PFS, and the former two factors independently impacted CSS.

Conclusion: Our results demonstrated that CXCR4 and CXCR7 can be used as prognostic biomarkers and prediction of aggressiveness of EMPD. Therapy targeting CXCR4 and CXCR7 may helpful to prevent EMPD progression and improve the prognosis of EMPD.

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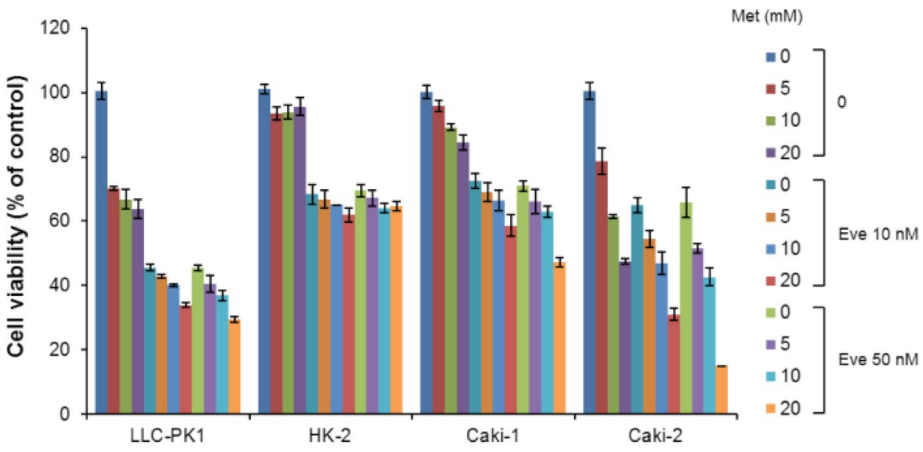

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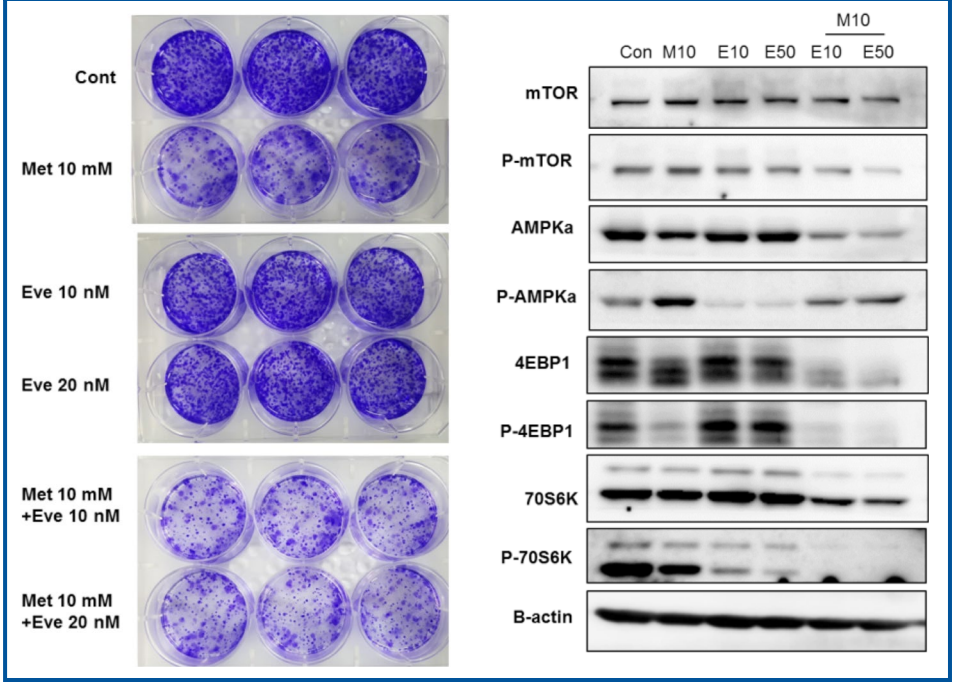

UP.055

Plasma Homocysteine Levels after Extracorporeal Shock Wave Lithotripsy in Patients Treated for Renal Stone Disease. Comparison of Two Different Shockwaves Rates: Single Centre Study

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Introduction and Objective: Plasma homocysteine levels are seen to be elevated in chronic renal failure patients. Studies regarding the relation of kidney function and plasma total homocysteine concentration have been done in past. In this study we aimed to see the difference of the total homocysteine concentration levels between two groups of patients after extracorporeal shock wave lithotripsy (ESWL). We compared groups based on slow vs. fast shock wave frequency rates and its effect on renal injury by assessing the homocysteine concentration.

Materials and Methods: The study consisted of 15 patients in each group who underwent ESWL for renal stones. Group A patients underwent slow shock waves 90/minute while group B patients underwent fast shockwaves delivery rate of 120/minute. Every Patient blood was taken before procedure and then at 3 days and 2 months period. The measurement of total homocysteine concentration, creatinine, vitamin B6, and vitamin B12. Elevations in plasma total homocysteine concentration levels may be caused by folate and vitamin B12 deficiencies that's why we checked if these folate and vitamin B12 levels were in normal range in our patients.

Results: The mean age of patients was 38.3 ± 10.6 years in slow shockwaves rate group while 39.1 ± 11.4 years in fast rate shock waves group. The total homocysteine concentration levels were increased in both groups but there was no significant difference of measurements between the two groups ($p > 0.05$). The homocysteine concentration increase in both groups was statistically significant viz from 8.7 ± 1.8 to 16 ± 3.9 and 12.1 ± 3.2 at 23 days and 2months, respectively.

Conclusion: After first-time ESWL, the increase in serum levels of total homocysteine concentrations due to renal injury. There was no significant difference in their levels between the slow rate and fast rate shock waves delivery.

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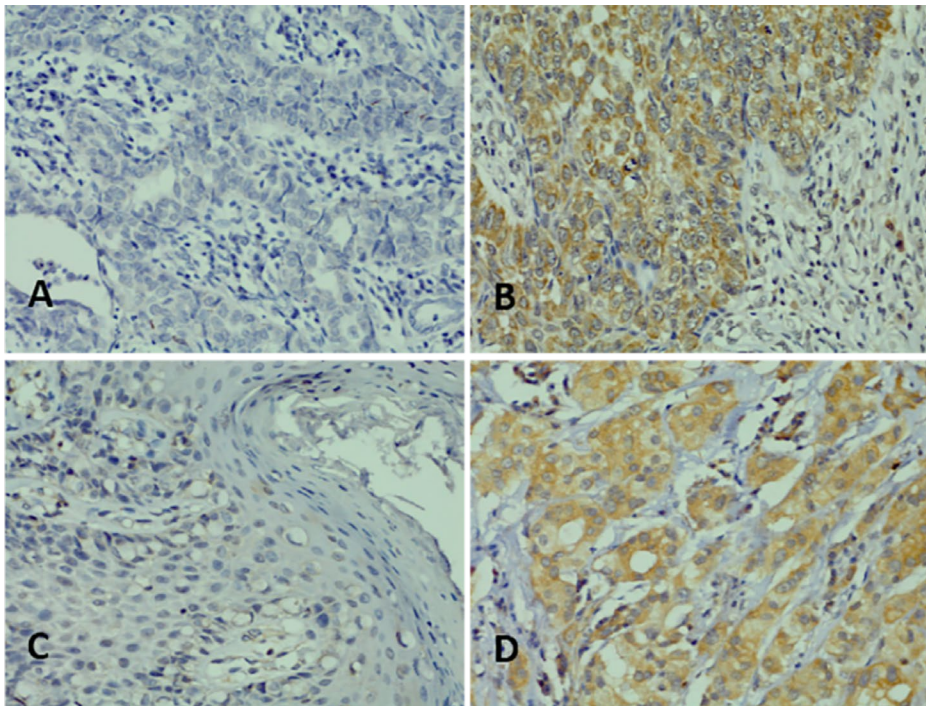

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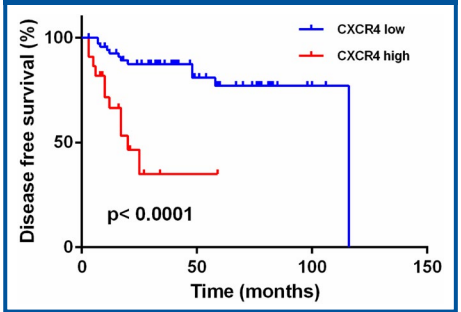

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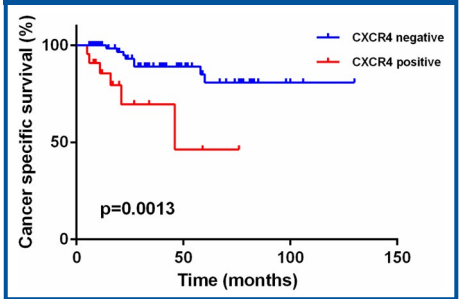

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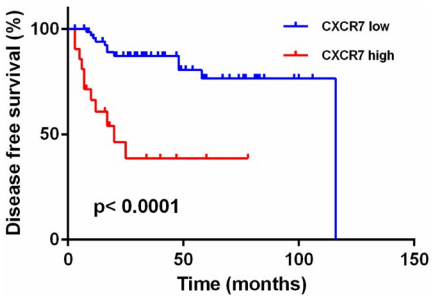

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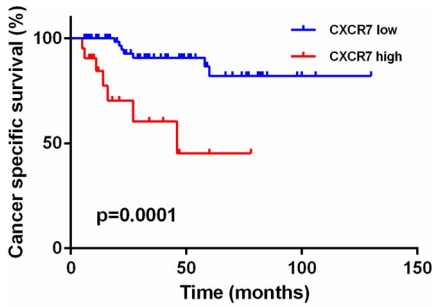

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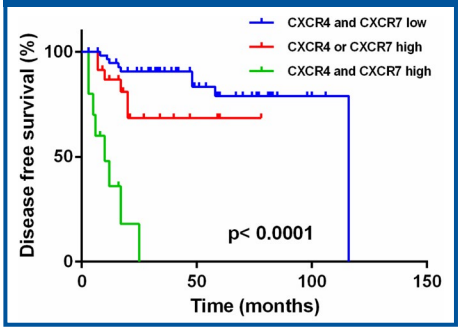

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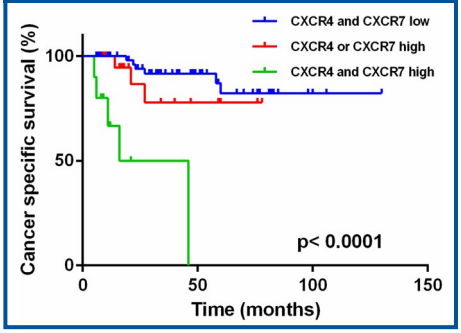

UP.056

Hypoxic Preconditioned Human Bone Marrow: Derived Mesenchymal Stromal Cell Therapy in a Rat Model of Renal Ischemia-Reperfusion Injury

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Intoduction and Objectives: Preclinical studies suggested that administered cultured stem cells protected kidney function against renal ischemia-reperfusion injury (IRI). The purpose of this study was to determine the therapeutic effects of hypoxic preconditioned human bone marrow–derived mesenchymal stromal cell (hBMSC) and the optimal route for cell delivery in a rat model of renal IRI.

Materials and Methods: Sixty male Sprague-Dawley rats were randomly divided into 6 groups (10 animals per group): sham, nephrectomy control, IRI control, renal arterial injection, renal parenchymal injection and tail venous injection. To induce renal IRI, the left renal artery was clamped with a vascular clamp for 40 minutes, and the right kidney was removed. Serum creatinine, BUN and glomerular filtration rate were evaluated 1 day prior to IRI, and 1, 2, 3, 4, 7 and 14 days after IRI. For histological studies, the kidney was removed 14 days after IRI.

Results: Two and one of mortality cases were observed in the renal parenchymal and tail venous injection groups, respectively. All hBMSC injections significantly reduced the extent of elevation in serum creatinine compared with the IRI control group 1, 2, 7 days after IRI. Renal arterial injection significantly reduced the extent of elevation in serum BUN compared with the IRI control group 1, 14 days after IRI. Renal arterial injection significantly reduced the extent of decrease in glomerular filtration rate compared with the IRI control group 2, 4, 7 days after IRI. Sirius red stain for the degree of fibrosis showed that kidney of renal arterial injection group was significantly less fibrotic than that observed in the IRI control group. The number of TUNEL positive cells increased after IRI, suggesting apoptosis or necrosis had occurred. TUNEL assay showed significantly decreased apoptosis in renal arterial, renal parenchymal and tail venous

injection groups compared to the IRI control group. A greater increase in glutathione reductase and glutathione peroxidase was observed in renal arterial, renal parenchymal and tail venous injection groups than in the IRI control group. These findings further suggest that anti-oxidative responses were elicited by IRI and hBMSC treatment contributed to further anti-inflammatory and anti-oxidative effects after IRI in this study.

Conclusion: Our study showed that renal function is most effectively rescued from renal IRI through renal arterial injection of hypoxic preconditioned hBMSC.

UP.057

Reproductive and Developmental Toxicity Evaluation following Intracavenous Injections of Human Bone Marrow-Derived Mesenchymal Stem Cells in Rats

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Introduction and Objectives: We aimed to assess the possible negative health effects of human bone marrow-derived mesenchymal stem cells (hBMSCs) on fertility and early embryonic development following intracavernous injections in rats.

Materials and Methods: A total of 88 Crl: CD (SD) male and female rats were equally divided into 4 groups in a random manner: control group (normal saline), low-dose group (2 x 105 hBMSCs), moderate-dose group (1 x 106 hBMSCs), and high-dose group (2 x 106 hBMSCs). hBMSCs or normal saline was injected into the penis of the rats 3 times at 2-week-intervals prior to mating.

Results: For male rats, various degrees of flushing and swelling were observed at the penile injection site in all the groups, although the severity increased in a dose-dependent manner in the hBMSC injection groups. The mean body weights, food consumption, and reproductive parameters did not significantly differ among the groups of both genders. The absolute and relative organ weights did not significantly differ among the groups. At the time of necropsy, no remarkable findings were observed in gross examinations in all groups. On histopathological analysis, minimal mononuclear cell infiltration was observed in the right epididymis of each rat in the moderate- and high-dose groups.

Conclusion: The non-toxic amount of hBMSCs for male fertility and early embryogenesis in rats under the test conditions was determined to be 2 x 106 cells/head.

UP.058

Second Look Transurethral Resection of Bladder Tumor: Is It Necessary in All T1 and/or High Grade Tumors?

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Introduction and Objective: We conducted this study to evaluate the role of second look transurethral resection of bladder tumor (TURBT) in accurate staging and grading of urothelial bladder cancer in patients with T1 and/or high grade bladder tumor.

Materials and Methods: A total of 107 patients with either T1 or high grade urothelial bladder cancer underwent restaging TURBT in this multi-institutional study. Repeat TURBT was performed in all patients within 6 weeks after initial surgery and prior to starting intravesical immunotherapy. Written informed consent was obtained from all participants and Institutional review board approved the study.

Results: Upstaging and/or upgrading was noted in 11 (10.3%) patients and residual tumor with the same grade and stage was evident in 18 (16.8%) patients. Tumor size, multifocality and presence of muscle at initial resection were predictors of upstaging and/or upgrading. Among 48 patients with single, small (<3 cm) tumor who underwent adequate initial resection, identified by the presence of muscularis propria in the specimen, neither upstaging nor upgrading was found in second look TURBT.

Conclusion: Second look TURBT is a valuable strategy in accurate staging of non-muscle invasive bladder tumors. However, in contrast to prior reports it does not seem to be necessary in all patients with T1 and/or high grade tumors. We noted that Second look TURBT in patients with single, small T1 and/or high grade tumor who underwent adequate initial resection is not associated with upstaging/upgrading or residual disease.

UP.059

Overexpression of Epidermal Growth Factor Receptor Predicts Bladder Cancer Local Aggressiveness

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Introduction and Objective: Epidermal Growth Factor Receptor (EGFR) is crucial for cell proliferation, differentiation and invasion, and may contribute to tumorigenesis. Overexpression of EGFR has been reported in many epithelial tumors such as urothelial bladder cancers, and may be an important predictor of prognosis. Our objective was to prove that the more EGFR is overexpressed, the higher tumor stage is and thus, the more aggressive tumor is.

Materials and Methods: We included 64 primary urothelial bladder cancers selected from our pathological files and six control cases of a normal bladder mucosa. Pta and pT1 samples were obtained from transurethral resection and pT2, pT3 and pT4 samples from radical cystoprostatectomies. Immunostaining was performed using lyophilized mouse monoclonal anti EGFR antibody. The following scoring approach was used:

*Score 0 = no staining, unspecific staining of tumor cells or less than 10% staining

*Score 1 = membranous weak and incomplete staining of more than 10% of tumor cells

*Score 2 = moderate and complete membranous staining of more than 10% of tumor cells

*Score 3 = strong and complete membranous staining of more than 10% of tumor cells. Scored 1+ tumors were classified as Low EGFR expression (LEE) and those scored 2+ or 3+ were classified as High EGFR expression (HEE).

Results: Tumor stage was pTa in four cases (6%), pT1 in 21 cases (33%), pT2 in 33 cases (51.5%), pT3 in 2 cases (3%) and pT4 in 4 cases (6.5%). In normal bladder mucosa, four cases (66%) revealed a completely negative staining and two cases (44%) were found to be score 1. In tumoral samples, 11 cases (17.2%) were HEE and 53 cases (82.8%) were LEE profile. All pTa tumors were LEE profile. HEE profile was found in 9.5% pT1 tumors, 15% pT2 tumors, 50% pT3 tumors and 90% pT4 tumors. A significant association between EGFR overexpression and tumor stage was found ($p = 0.011$).

Conclusion: EGFR overexpression by urothelial tumor cells appears to be associated with a higher stage, and may be predictive of local extension of the tumor.

UP.060

Relation of ALDH1a and CD44 with Clinicopathological Factors in Transitional and Squamous Cell Carcinomas of Urinary Bladder

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Introduction and Objective: Urinary bladder cancer is a global health problem. There is increasing need to improve current therapeutic approaches to improve prognosis. Tumor-initiation, self-renewal and resistance to treatment characterize Cancer stem cells (CSCs). Urothelial CSCs cannot be isolated by a 'one-marker-fits-all' approach. Various marker combinations are better. Our aim was to study the immunohistochemical expression of ALDH1a and CD44 in bladder cancer and correlate them with clinicopathological parameters.

Materials and Methods: The study included 60 archival cases stained by ALDH1a and CD44s antibodies (46 transitional and 14 squamous cell carcinoma). All cases were primary diagnostic specimens [either transurethral resection of tumor (TURT) or cystectomy] not preceded by any type of therapy. All specimens were analyzed after thorough examination of the whole slide. Positive expression was assigned when any number of malignant cells showed cytoplasmic staining for ALDH1a and membranous staining for CD44.

Results: ALDH1a was positive in 39.1% of TCC and 57.1% of SCC cases. CD44 was positive in 80.4% of TCC and 100% of SCC cases. In TCC, ALDH1a and CD44 were associated with advanced stage (p=0.04 and 0.000 respectively). In SCC, ALDH1a was associated with high grade (p=0.007). CD44 was higher in cases presented in early stage (p=0.03) and associated with bilharziasis (p=0.02). CD44 was inversely correlated to ALDH1a (r= - 0.6, p=0.03) and was significantly higher in SCC (p=0.001).

Conclusion: ALDH1a expression was associated with unfavorable features like advanced stage in TCC and high grade in SCC. Target therapy against ALDH1a could be effective, especially in advanced tumors. Target therapy against CD44 could be helpful for bladder SCC or TCC with squamous differentiation.

UP.061

En-Bloc Transurethral Resection of Nonmuscle Invasive Bladder Cancer: Pathological Effectiveness

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Introduction and Objective: En-bloc transurethral resection (en-bloc TUR) is a modified procedure of transurethral resection of the bladder tumor (TUR-BT) for the patients with non-muscle invasive bladder cancer. Recently, en-bloc TUR has been induced in several institution, the safety has been established such as TUR-BT. Resection by en-block could lead to the accurate pathological diagnosis. We investigated the cases of en-bloc TUR and the pathological effectiveness in diagnosis.

Materials and Methods: A total of 78 patients which underwent en-bloc TUR from April 2013 to November 2016 at our hospital. Pathological effectiveness in diagnosis was investigated. Of these, pathological T stage which diagnosed as pT1 were reviewed surgical margin and diagnosed in detail by the position of muscularis mucosae (MM).

Results: Median size of tumor was 14.3mm (range: 1 to 50mm). Median operation time was 52 (range: 15 to 157min). Near perforation occurred in 5 cases, but none of them needed additional operation to repair. No other adverse events occurred. Muscularis was included inside the specimen in 66 cases (90.4%) of the total 89 cases. Pathological T stage was diagnosed: pTa (n=54), pT1 (n=15), ≥ pT2 (n=2), others (n=7). Recurrence rate and progression rate was 21.2% and 1.1%. Eleven cases which diagnosed as pT1 was enabled to diagnosis in detail by the position of MM: lamina propria invasion above MM (n=8), lamina propria invasion at the level MM (n=3), lamina propria invasion beyond MM (n=0). Surgical margin was enabled to diagnosis in all cases: positive (n=2), negative (n=9).

Conclusion: En-bloc TUR was a safe and feasible procedure for the patients with non-muscle invasive bladder cancer. The difference of muscularis propria and MM was able to define clearly in the sample of en-bloc TUR. This enabled the in detail diagnosis of pathological T stage and shortened the time for diagnosis than TUR-BT. All pT1 cases were enabled to diagnosis in detail by the position of MM.

UP.062

Dynamic Real-Time Microscopy of Bladder Neoplasms Using Confocal Laser Endomicroscopy

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Introduction and Objective: Confocal laser endomicroscopy (CLE) enables dynamic imaging of the cellular structures below the mucosal surface and holds promise in providing real time optical diagnosis and grading of urothelial carcinoma. We presented our initial experience using CLE for the diagnosis of urothelial carcinoma of bladder.

Materials and Methods: Twenty one patients scheduled to undergo transurethral resection of bladder tumors were recruited. One urologist who had already participated in a computer-based training course performed all the CLEs. After standard white light cystoscopy (WLC), fluorescein was administered intravesically as a contrast dye. A 2.6 mm probe based CLE (Cellvizio, Mauna Kea Technologies) was passed through a 26Fr resectoscope to image normal and abnormal appearing areas. The images were collected with 488 nm excitation at 8 to 12 frames per second. The endomicroscopic images were compared with standard hematoxylin and eosin analysis of transurethral resection of bladder tumor specimens.

Results: Of the 21 recruited patients, 1 had no tumor but inflammation, 2 had carcinoma in situ (CIS), 7 had low grade tumors, 10 had high grade tumors and 1 had a bladder liomyoma. The overall diagnostic accuracy is 80.9% (17/21) combining CLE+ WLC. One inflammation was regarded as CIS, one low grade tumor was regarded as high grade and 2 high grade tumors were regarded as low grade.

Conclusion: CLE is an adoptable technology for novice CLE observers after a training session. CLE demonstrated clear differences between normal mucosa and malignant lesions. However, real-time differentiation between low and high grade tumors, inflammation and cancer, can still be challenging.

UP.063

Results of Repeat Transurethral Resection of Bladder Tumor (TURBT) by Institution Performing the Initial TURBT: Comparative Analyses between Referred and Non-Refrerred Group

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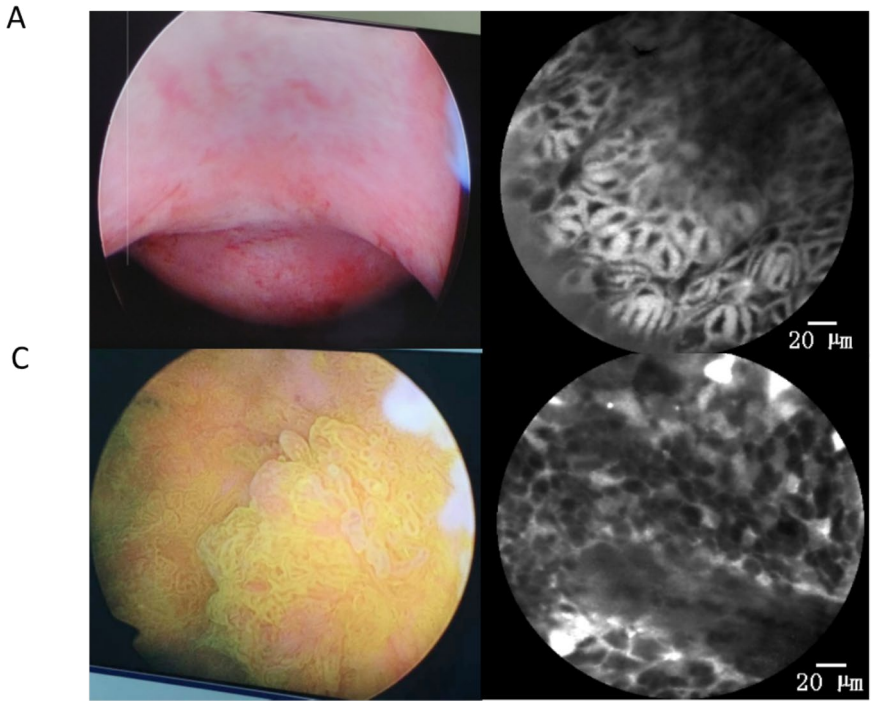
Introduction and Objective: To compare the results of repeat transurethral resection of bladder tumor (TURBT) by institution performing the initial TURBT.

Materials and Methods: We retrospectively reviewed the medical records of 289 patients who underwent repeat TURBT within 6 weeks after initial TURBT between 1998 and 2013. We divided the patients into two groups by institution performing the initial TURBT and then analyzed the intergroup differences

UP.062, Figure 1. Representative Images from WLC and CLE



A) WLC image of bladder liomyoma B) CLE image of bladder liomyoma C) WLC image of intravesically stained papillary tumor D) CLE image of intravesically stained papillary tumor

UP.063, Table 1.

	Non-referred group	Referred group	P- value
Ta at initial TURBT			
Residual tumor	19(57.6%)	10 (66.7%)	0.210
Overall upstaging	4 (12.1%)	4 (26.7%)	0.551
Upstaging to T2	1 (3.0%)	0 (0%)	0.496
T1 at initial TURBT			
Residual tumor	104 (55.6%)	47 (87.0%)	<0.01
Overall upstaging	6 (3.2%)	11 (20.4%)	<0.01
Upstaging to T2	6 (3.2%)	11 (20.4%)	<0.01
Overall			
Residual tumor	123 (55.9%)	57 (82.6%)	<0.01
Overall upstaging	10(4.5%)	15 (21.7%)	<0.01
Upstaging to T2	7 (3.2%)	11 (15.9%)	<0.01

in residual tumor and upstaging rate and the factors significantly correlated with residual tumor.

Results: The mean age was 69.6 ± 11.1 years and the mean follow-up was 49.7 (range, 0–191) months. The referred group included 69 patients, while the non-referred group included 220 patients. The referred group included 57 (82.6%) patients with residual tumor after repeat TURBT. Overall upstaging occurred in 15 (21.7%), and upstaging to T2 occurred in 11 (15.9%) of the initial Ta and T1 patients. In the non-referred group, there were 123 (55.9%) patients with residual Tumor. Overall upstaging occurred in 10(4.5%), and upstaging to T2 occurred in 7 (3.2%) patients. Gross hematuria, grade, and tumor quantity and size were significantly associated with residual cancer on multivariate analysis.

Conclusion: These intergroup differences reflect the relatively high staging of the referred group and variation in surgeon proficiency.

UP.064

Factors Predicting Concomitant Carcinoma in Situ in Patients with Initially Diagnosed Non-Muscle-Invasive Bladder Cancer

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Introduction and Objective: Non-muscle-invasive bladder cancer is sometimes accompanied by carcinoma in situ (CIS). Random bladder biopsy is a dispensable tool to make therapeutic decisions in such cases. However, all patients with non-muscle-invasive bladder cancer do not need to undergo random bladder biopsy. There have been few studies on factors preoperatively predicting concomitant CIS in patients with initially diagnosed non-muscle-invasive bladder cancer. In this study, we retrospectively examined patients with non-muscle-invasive bladder cancer for the factors suggestive of concomitant CIS.

Materials and Methods: Between 2007 and 2016, 229 patients with non-muscle-invasive bladder cancer (male: 189, female: 40) undertook random bladder biopsy of normal appearance mucosa during initial transurethral resection of protruded tumors. We compared positive random biopsy results with tumor sizes (<30 mm, 30 mm≦), tumor numbers (solitary, multiple), tumor types (pedunculated, sessile), tumor T category (pTa, pT1), cancer grade (low grade, high grade), preoperative urinary cytology (negative: class I and II, suspicious: class III, positive: class IV and V), appearance of bladder mucosa other than protruded tumors at preoperative cystoscopy (normal, abnormal), or smoking history (smoking, non-smoking).

Results: Overall positive rate was 30.6% (70 of 229). On univariate analysis, multiple tumor, sessile type tumor, T category and cancer grade, suspicious and positive urinary cytology, abnormal appearance of bladder mucosa, or smoking history, was significantly associated with positive random biopsy results. Multivariate analysis using logistic regression analysis demonstrated that independent preoperative factors on positive random biopsy results were urinary cytology (suspicious and positive) and abnormal appearance of bladder mucosa. (p= 0.0096 and p< 0.0001, respectively).

Conclusions: Although random bladder biopsy in initially diagnosed non-muscle-invasive bladder cancer is not routinely recommended, random biopsy results have an impact on therapeutic decisions in patients with non-muscle-invasive bladder cancer. Our findings suggest that random bladder biopsy may be recommended for patients with initially diagnosed non-muscle-invasive bladder cancer, who have suspicious or positive of urinary cytology and abnormal appearance of bladder mucosa other than protruded tumors at preoperative cystoscopy.

UP.065

Red Patches Seen during Endoscopic Surveillance of Bladder Cancer – When Should we Biopsy?

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Introduction and Objective: To determine whether the regular biopsy of red patches (RP) seen during endoscopic surveillance for bladder cancer is worthwhile.

Materials and Methods: Four thousand eight hundred and five flexible cystoscopy (FC) reports were retrospectively reviewed over a 12-month period (January – December 2015) and those found to have red patches at check flexible cystoscopy were included in the study. A proportion of them had biopsies with underwent histopathological analysis.

Results: Two hundred and forty-one flexible cystoscopies performed on 183 patients on endoscopic surveillance for bladder cancer had red patches and of these, 120 (49.8%) had a history of intravesical BCG therapy. Eighty-five patients (35.3%) underwent biopsy of the red patch. Malignancy was found on 20 biopsies (23.5%), of which, 11 out of 20 (55%) had CIS. No malignancy was found in any patients on surveillance for low risk bladder cancer. The majority of recurrences were found in patients who had been biopsied within the last 7 to 12 months.

Conclusion: We recommend the biopsy of red patches found during endoscopic surveillance of patients with intermediate/high risk bladder cancer if no biopsy has been performed within the previous 12 months due to the high yield of malignant recurrence identified.

UP.066

Trend and Features of Bladder Cancer in Iran during 2008-2010

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Introduction and Objective: To report the features of bladder cancer in Iran during years 2008-2010 and compare it with reports from 2003.

Materials and Methods: All extracted specimens of the anatomical region of bladder with diagnosis of cancer submitted from pathology departments of Iranian hospitals during 2008-2010 to the cancer registry at the Ministry of Health and Medical Education were investigated and appropriate data were extracted.

Results: Fifteen thousand and twenty-nine specimens of bladder cancer were included in the analysis including 12389 male specimens and 2640 specimens from females yielding an incidence rate of 6.84 for the total population and 11.14 for the male population. The numbers of reported cases for each year were 4891, 5113, and 4432 for the years 2008, 2009 and 2010. The highest reported frequency was observed in the age group of 70-79 years then 60-69 years and then 50-59 years. Ninety-five percent of submitted specimens were transitional cell carcinoma of the bladder. Grading according to ICD was grade 1, 2 and 3 in 4686, 3133 and 4440 specimens.

Conclusion: Compared to the 2003 rate of 2.12 for the standard population of WHO, a substantial increase (almost 50%) in incidence of bladder cancer to 3.28 (for the same standard population) was observed during years 2008 to 2010 which is alarming.

UP.067

Red Patches in The Bladder – Can We Reduce the Number of Biopsies?

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Introduction and Objective: A red patch (RPs) in a bladder is a flat lesion of unknown origin unless proven on histology. White-Light cystoscopic appearances are nonspecific and can range from dysplasia to carcinoma in situ (CIS). The routine practice is to biopsy these lesions under anaesthesia diagnose the etiology and more importantly to exclude a carcinoma in situ. The objective is to identify the number of avoided biopsies.

Materials and Methods: A retrospective review of 1730 patients who underwent flexible cystoscopy (FC) procedures for diagnostic and surveillance purposes during the year 2015 was undertaken. Patients with RPs with obvious bladder tumours and those lost to follow up were excluded. Those who had RPs were either managed conservatively (elderly, history of UTI or prior history of low grade cancer) or underwent biopsies.

Results: A total of 128 (8%) patients with RPs were identified with 94 de novo pts (median age of 72 years) and 34 pts (median age of 76 years) with a previous cancer history. In the de novo group, 51 were listed for biopsies, 39 pts were for repeat FC and 4 pts were discharged. Only 42 out of 51 were found to have a RP on the table which was biopsied (no RPs seen in 9 pts). Repeat FC pts were not found have further RPs. Superficial cancer was found in 6 pts (14.2%). The rest 35 pts (83%) showed benign histopathology. Six patients with prior history had repeat FC and had RPs resolved in 5 pts. Nine (31%) cancers were found on biopsies in the rest 29 pts. In total 71 pts (55.4%) with RPs underwent biopsies (though 80 pts (62.5 %) with RPs had anaesthesia) yielding 15 (11.7%) cancers. About 48 pts (37.5%) were managed conservatively avoiding biopsies. There were no CIS identified.

Conclusion: There is a significant cancer on RPs biopsies though all patients with RPs do not need routine biopsies. A relook FC can reduce the incidence of anaesthesia and biopsies in selected patients especially in this age of increasing elderly population.

UP.068

Predicting Tumour Recurrence in Patients Treated with Bacillus Calmette-Guérin

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Introduction and Objective: Since its introduction, Bacillus Calmette-Guérin (BCG) immunotherapy remains one of the most effective intravesical therapies available for patients with high-risk bladder cancer. However, a significant number of patients treated with intravesical BCG therapy do not respond to this treatment. Since we cannot predict in which patients BCG therapy will fail, markers for non-responders are needed. UroVysion® is a multitarget Fluorescence In Situ Hybridization (FISH) test for bladder cancer detection. The aim of this study was to evaluate if FISH can be used to early identify BCG failures.

Materials and Methods: In this multicenter, prospective study, three bladder washouts at different time points during treatment (t0 = week 0 pre-BCG, t1 = 6 weeks following initial BCG instillation, t2 = 3 months following TURB) were collected for FISH from patients with high-risk bladder cancer treated with BCG between 2008 and 2013. Data on bladder cancer recurrence and duration of BCG maintenance therapy were recorded.

Results: Thirty-six (31.6%) out of 114 patients developed a recurrence after a median time of 6 months (range 2–32). No association was found between a positive FISH test at t0 or t1 and risk of recurrence (p=0.79 and p=0.29, respectively). A positive t2 FISH test was associated with a higher risk for recurrence (p=0.001). Patients with a positive FISH test 3 months following TURB had a 4.6 fold times higher risk for developing a recurrence compared to patients with a negative FISH test (figure 1). Progression data could not be evaluated due to the low number of events.

Conclusion: Patients with high-risk bladder cancer and a positive FISH test 3 months following induction BCG therapy have a higher risk for developing tumour recurrence. UroVysion® FISH test can therefore be a useful additional tool for physicians when determining a treatment strategy following initial BCG induction therapy.

UP.069

Prognostic Value of Ki-67 Proliferative Index in Diagnosis and Follow Up for Non-muscle-invasive Bladder Cancer in Patients with and without Bilharziasis

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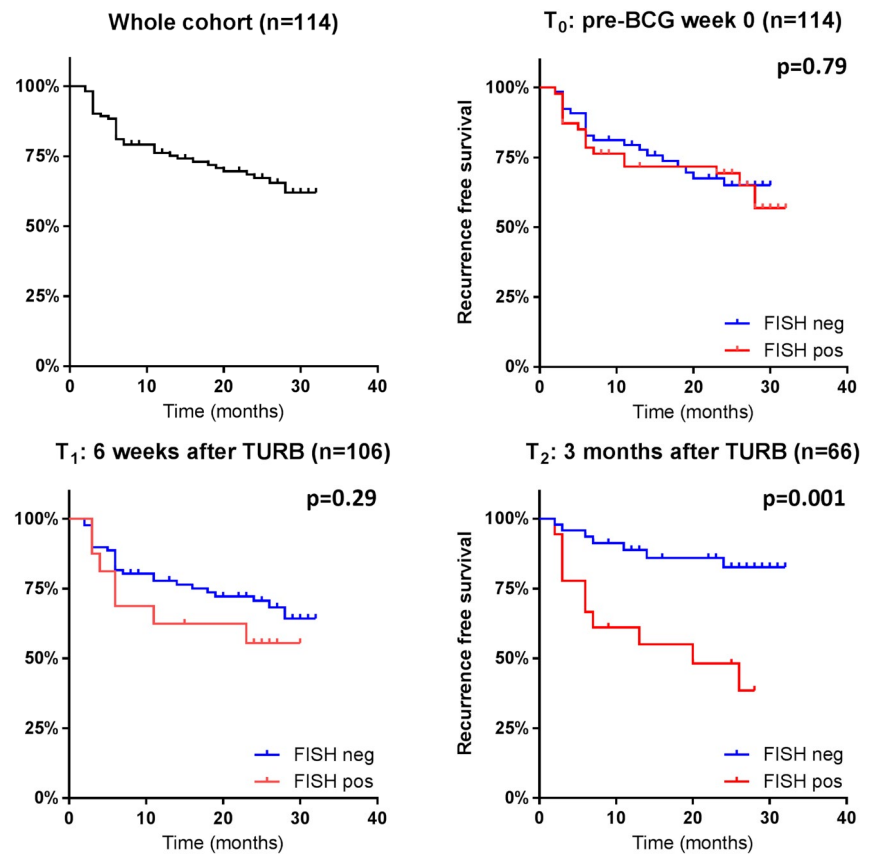
Introduction and Objectives: Ki-67 expression was found as an independent prognostic factor for time of relapse for patients with NMIBC. The purpose of this study is to validate Ki-67 proliferative index as a marker for the initial diagnosis and follow up of the bilharzial and non-bilharzial patients with NMIBC.

Materials and Methods: Our study included 140 patients with bladder cancer; 120 of them were non-muscle invasive bladder cancer (NMIBC) and 20 were muscle-invasive bladder cancer (MIBC) used as a positive control. Diagnosis of NMIBC indicates an immediate single dose of intravesical Adriamycin, followed by a 6 instillations course of full dose intravesical BCG. The Immuno histochemical expression of the tumor marker Ki-67 in the tissue of the studied

UP.068, Figure 1.



Recurrence free survival curves. A) Patients with a positive FISH test versus a negative FISH test at t0 (week 0 pre-BCG). B) Patients with a positive FISH test versus a negative FISH test at t1 (6 weeks following initial BCG instillation). C) Patients with a positive FISH test versus a negative FISH test at t2 (3 months following TURB).

cases was measured in the initial pathological diagnosis as well as in the follow up specimen. The Ki-67 labeling index was compared in both settings in the bilharzial (83 patients) and non-bilharzial (57 patients) cases of non-muscle-invasive bladder cancer. All the patients were categorized according to the tumor progression during the follow up period regarding the histopathological stage of the tumor, as well as the change in Ki-67 labeling index in these groups.

Results: There was significant correlation between Ki-67 labeling index and tumor stage in initial diagnosis and follow up. The higher the stage and grade of the tumor, the higher the Ki-67 labeling index. Ki-67 was higher in the follow up compared to its level in the initial diagnosis. The increase was directly correlated to the stage of the tumor (P value=0.001) (table 1). There was significant correlation between expression of Ki-67 in tissue after one year follow up and pathology at initial diagnosis classified according cutoff value (Kappa value=0.372), P value=0.001) (table 2).

Logistic regression model showing Ki-67 measured at initial diagnosis proved to be a predictor of disease prognosis. Adjusted R Square (0.571), P value (0.002), OR (1.416), 95% CI (1.138-1.761).

Conclusions: Ki-67 over expression in the follow up period (after initial complete TUR-BT and intra vesical chemotherapy and immunotherapy) might be useful for stratifying patients with Ta and T1 into risk categories. Our prospective study confirmed this finding.

UP.069, Table 1. Relation between Ki-67 Labeling Index and Tumor Stage in Initial Diagnosis and Follow Up

Group	Markers	N	Range	Minimum	Maximum	Mean		SD	P-value
						Statistic	SEM		
	Ki-67	8	10.0	10.00	20.00	12.50	2.50	5.0	NS
Ta→Ta	Ki-67follow	8	10.0	20.00	30.00	22.50	2.50	5.0	
Ta→T1	Ki-67	32	20.0	.00	20.00	10.00	1.99	7.98	<0.001
	Ki-67follow	32	60.0	10.00	70.00	27.50	3.48	13.90	
T1→T1	Ki-67	16	50.0	.00	50.00	16.25	5.73	16.20	=0.001
	Ki-67follow	16	35.0	20.00	55.00	33.75	4.09	11.57	
T1→T2-4	Ki-67	40	50.0	10.00	60.00	33.00	2.98	13.32	<0.001
	Ki-67follow	40	40.0	40.00	80.00	59.50	2.51	11.23	
T2-4→T2-4	Ki-67	16	20.0	50.00	70.00	61.88	2.98	8.46	<0.01
	Ki-67follow	16	25.0	65.00	90.00	78.13	3.26	9.23	
Ta→T2-4	Ki-67	8	20.0	10.00	30.00	21.25	4.27	8.54	
	Ki-67follow	8	40.0	50.00	90.00	65.00	8.66	17.32	=0.01

UP.069, Table 2. Association between Expression of Ki-67 in Tissue after One Year Follow Up and Pathology at Initial Diagnosis Classified According Cutoff Value

		Pathology		Kappa value	P value
		Non-muscle-invasive	Muscle-invasive		
Ki-67	≤ 45	81 (67.5%)	0 (0%)	0.372	0.001**
	> 45	39 (32.5%)	20 (100.0%)		

**p< 0.01= highly significant.

UP.070

Predictors of Bladder Cancer Following Haematuria

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Introduction and Objectives: Bladder cancer typically present with haematuria, although only a minority will have underlying malignancy. We aimed to identify predictors of bladder cancer diagnosis following evaluation of haematuria in order to inform an appropriate approach to haematuria in Australia.

Materials and Methods: We undertook a retrospective cohort study identifying adult patients undergoing cystoscopic procedures at our institution for investigation of visible haematuria over a twelve-month period in 2015. Patients with a known history of bladder/renal/urinary tract cancer were excluded. Patient data including demographics were collected. Histology results were obtained for those who underwent tumour resection or biopsy.

Results: Our sample comprised 231 patients, of whom 39 (17%) were found to have bladder cancer, the youngest of these being 54.7 years old. Age at cystoscopy was the only independent predictor of bladder cancer diagnosis following multivariable analysis. The predicted probabilities of bladder cancer after adjustment for gender, socioeconomic status and smoking status were: <1% at age <45 years, 13% at age 65 and 26% at age 80.

Conclusions: Patients presenting with haematuria need to be promptly and appropriately investigated in order to diagnose underlying malignancy if present. Some guidelines encourage investigating all patients with haematuria, although this imperative must be balanced against limited resource availability, leading others to be more selective. Our findings support the routine investigation of visible haematuria in patients aged >45 years, with a more individualised approach in younger patients and those with non-visible haematuria, in keeping with the most recent BAUS/NICE guidelines.

UP.071

Identification of Factors Associated with Delayed Haematuria Assessment

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Introduction and Objective: While most causes of haematuria are benign or idiopathy, haematuria is the commonest presenting symptom in bladder cancer. A likely benign eitiology may lead to delayed or inadequate haematuria assessment, subsequently affecting bladder cancer management in some patients. We aimed to identify factors that impact on the timeliness and adequacy of haematuria evaluation.

Materials and Methods: We undertook a retrospective cohort study using electronic medical records, identifying patients who underwent cystoscopy for investigation of haematuria at our institution. Cystoscopic procedures occurring from 1st January 2015 to 31st December 2015 were identified. Data on patient demographics, smoking, anticoagulation, degree of haematuria and referring clinician were collected. Exclusion criteria included age <18 years, history of bladder/urinary tract/renal cancer and cystoscopy for indications other than haematuria. Primary outcome measures were 1) Time from GP referral to urology consultation 2) Time from urology consultation to cystoscopy and 3) Receipt of investigations in the 180 days prior to cystoscopy. Comparisons between risk factors were carried out using negative binomial regression for count outcomes and chi-square test for categorical outcomes.

Results: Over the study period, 308 eligible cases (228 males, 80 females) were identified. One hundred and ninety six (64%) patients were referred from the general practice setting. Patients waited a median of 38 days from GP referral to urology consultation and 28 days from urology consultation to cystoscopy. The median time to urology consultation was 65 days for women and 33.5 days for men ($P = 0.015$). However, the observed difference between males and females was no longer statistically significant on multivariable regression and the only independent predictors of a shorter interval were macroscopic haematuria and suspicious imaging findings. No significant differences in recent investigations between genders were observed.

Conclusions: Gender is not a significant predictor of delayed haematuria assessment or receipt of recent

investigations. Patients with macroscopic haematuria are more likely to experience prompter review by urology. Younger patients and those not on anticoagulation received fewer recent investigations. More education is required to ensure that patients with haematuria are evaluated appropriately.

UP.072

MMP-2 and MMP-9 as Prognostic Markers for Early Detection of Urinary Bladder Cancer

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Introduction and Objective: The aim of the work is to identify and assess MMP-2 and MMP-9 in urine samples of bladder cancer patients and to validate results by correlations with analysis of urinary bladder tissue and blood samples. Correlations with histopathology findings, clinical picture, and tumor stage will also be conducted.

Materials and Methods: Thirty two patients admitted to the urology department were enrolled in the study; 22 were histologically diagnosed as bladder cancer patient whereas the remaining 10 patient were diagnosed as cystitis. Ten healthy control subjects were also included in the study. Total proteins were extracted from samples and then subjected to vertical polyacrylamide gel electrophoresis. The immunoassay technique was used to assess the expression of MMP-2 and MMP-9 in urine,serum of the three group and tissue of malignant cases.

Results: MMP-2 and MMP-9 expression is increased in urine of patients with bladder cancer than benign group and normal control group with significant difference (P Ë, 0.001). Figure (1). MMP-2 and MMP-9 expression is increased in serum of patients with bladder cancer than benign group and normal control group with high significant difference (P Ë, 0.001). Figure (2). There was significant correlation between MMP-2 and MMP-9 expression in urine and tissue of the malignant group. (P Ë, 0.001). There was significant correlation between the expression of MMP-2 and MMP-9 in the tissue and both grade and stage of the tumor.

Conclusion: Our study results showed that MMP-2 and MMP-9 were over expressed in urine, serum and tissue samples of patients with bladder cancer. While their expression was rare in benign tumor. This reveals that MMP-2 and MMP-9 may contribute to the invasive properties of bladder carcinoma and may play an important role in its progression.

UP.073

Results of Organ-Sparring Treatment of Muscle-Invasive Bladder Cancer

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Introduction and Objective: In 2013, 14 446 newly diagnosed cases of bladder cancer (BC) in Russia included 26% T3-T4 stages. Thus, every fourth Russian BC first detected at an advanced stage. The choice of treatment for such patients uses cystectomy or organ-sparring therapy (Guidelines EAU-2016). Performing chemotherapy (CT) (M-VAC, GP and others) is accompanied with severe side effects (myelosuppression, hand-foot syndrome, dyspepsia, etc.), which decrease the QoL and effectiveness of therapy. The theoretical and clinical data demonstrates a higher concentration of cisplatin within tumor following intra-arterial CT (IACT) as opposed to intravenous delivery. We used this fact successfully to increase the efficiency of treatment and overall survival (OS) of pts with platinum-based drugs in locally advanced BC cases.

Materials and Methods: We studied the results of the regional IACT in 21 patients with BC in stages T3a-4aN0-1M0G2-3, mean age 68,4±3,1 years, in 1998-2003. In the 16 cases previously conducted sparing treatment for BC (TURB + neo- or adjuvant CT), with weak effect. After catheterization and angiography of vesical arteries all pts received courses (6 to 36, median 18) of regional CT (cisplatin 50 mg/m² and adriablastin, 20 mg/m²). After completion of IACT the main group of pts was followed for the next 10 years.

Results: Prolonged usage of IACT with the standard three-week break, contributed to a partial and complete remission of the tumor in 13 (61.9%) patients. During the 24 months follow-up after the CT we didn't found tumor growth in 7 (33.3%) pts. The treatment effect was determined with the degree of differentiation and tumor stage, regional metastases and the prior cancer history. In 4 (19.0%) cases with endoscopic confirmation of tumor progression, we evaluated palliative cystectomy (Guidelines EAU-2016). In one removal bladder were not found tumor cells, which was regard as curative tumor pathomorphosis. After the first 12 months of treatment (16 courses), 2 patients refused follow-up due to the increase of the creatinine: we diagnosed stage II ureterohydronephrosis, which required a nephrostomy puncture. During the first 60 months 6 (28.6%) patients died, while 5 - of tumor progression. Total toxicity during chemotherapy in patients revealed moderate myelosuppression (neutropenia I-II degree of thrombocytopenia and II degree). Five-year overall survival rate was 71.4%, the similar indicator, with other researchers. Overall survival of patients with BC was determined by tumor stage, age, severity of comorbidities and regional metastases. To 120 months of follow-up, 5 (23.8%) patients survived 10 years with a functioning bladder: 4 pts with T3N0M0G2, one - T3bN1M0G2. All survivers were younger than 65 years.

Conclusions: Implementation of the IACT was effective in more than 61.9% of cases in T3a-4aN0-1M0G2-3 stage. Minimizing side effects was achieved through selective intra-arterial pass the drug to the tumor, with a decrease in medication dose. Ten-year overall survival rate was 23.8%, which is ahead of the average rates for patients with locally advanced BC and allows us to confidently talk about the need for further research in this direction. Source of Funding: Given the known benefits of organ treatment muscle-invasive bladder cancer, including transurethral surgery and intra-arterial chemotherapy, his method showed visible benefits with minimal side effects. Performing the regional (intra-arterial) chemotherapy with platinum-based drugs in patients with locally advanced bladder cancer the overall 10-year survival of patients was comparable with similar rates after radical cystectomy.

UP.074

C1orf198 May Serve as an Independent Predictor of Metastasis in Patients with Muscle-Invasive Bladder Cancer

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Introduction and Objective: Determination of metastasis biomarkers is urgent in the management of bladder cancer (BC). With the existing models predicting BC metastasis, we found two deviant groups that were unpredictable with clinical parameters. One is at high risk of pN+ but actually with pN0 (good prognosis group, G) and the other one is at low risk of pN+ but actually with pN+ (poor prognosis group, P). The present study aimed to determine the gene expression differences between these two groups with SEER and TCGA database and validate the results in our own cohort.

Materials and Methods: 1603 patients with radical cystectomy (RC) from the SEER database were enrolled to build a multivariate model predicting BC metastasis. This model was applied in 248 patients from TCGA database to distinguish these two deviant groups (G and P). The different expressed genes of the two groups were compared by t-test. RT-qPCR was applied to validate the results in a consecutive cohort of 127 BC patients from Fudan University Shanghai Cancer Center who underwent RC in 2011-2015.

Results: The multivariate logistic regression model based on SEER population identified 256 patients as group G and 76 patients as group P. The similar phenomenon was observed in TCGA database with 37 patients of group G and 17 patients of group P respectively. 183 genes showed significant difference between these two groups. Finally, 18 genes achieved a significant statistical power (P<0.05) in predicting lymph node metastasis in the TCGA cohort excluding these two deviant groups. Furthermore, the RT-qPCR results of our own cohort identified C1orf198 (P=0.04) as the only gene that expressed differently in the two groups.

Conclusion: Our study suggested that C1orf198 may serve as an independent predictor of metastasis in patients with muscle-invasive bladder cancer.

UP.075

Cancer and All-Cause Mortality in Bladder Cancer Patients Undergoing Radical Cystectomy: Development and Validation of a Nomogram for Treatment Decision-Making

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Introduction and Objective: Given concerns regarding underutilization and morbidity associated with radical cystectomy, there is a need for incorporation of cancer-specific and competing risks into patient counseling and guideline recommendations. We developed and validated a nomogram assessing cancer and all-cause mortality following radical cystectomy.

Materials and Methods: We conducted analyses of 5,325 and 1,257 patients aged 66 years diagnosed with clinical stage T2-T4 muscle-invasive bladder cancer between 2006–2011 using Surveillance, Epidemiology, and End Results (SEER) and Texas Cancer Registry (TCR) Medicare linked-data, respectively. Cox proportional hazards models were used and a nomogram was developed to predict 3- and 5-year overall and cancer-specific survival with external validation and concordance indices.

Results: Patients who underwent radical cystectomy were more likely to have been younger, male, married, non-Hispanic white and to have had fewer comorbidities than those who did not undergo radical cystectomy (p<0.001). Married patients, in comparison to their unmarried counterparts, had both improved overall (Hazard Ratio (HR) 0.76= 95% CI 0.70 to 0.83, p<0.001) and cancer-specific (HR 0.76= 95% CI 0.68 to 0.85, p<0.001) survival. A nomogram developed using SEER-Medicare data, predicted 3- and 5-year overall and cancer-specific survival rates with a C-Indices of 0.65 and 0.66 in the validated TCR-Medicare cohort, respectively.

Conclusions: Older, unmarried patients with increased comorbidities are less likely to undergo radical cystectomy. Married patients had significantly improved utilization of surgery and improved overall and cancer-specific survival. We developed and validated a generalizable instrument which has been converted into an on-line tool (Radical Cystectomy Survival Calculator© (RCSC)), to provide a benefit-risk assessment for patients considering radical cystectomy available at https://www.utmb.edu/surgery/ urology/.

UP.076

Use of Concurrent Chemotherapy with Radiation Therapy for Bladder Cancer in the United States: A Quality of Care Comparative Effectiveness Study

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Introduction and Objective: For older bladder cancer patients, there is limited evidence of the efficacy of concurrent chemotherapy with radiation therapy in the community setting. Our goal was to assess the relationship between concurrent chemotherapy use and survival in a large, population-based cohort of older patients with muscle-invasive bladder cancer.

Materials and Methods: We used the Surveillance, Epidemiology, and End Results (SEER)–Medicare database from January 1, 2001 through December 31, 2011, to identify 9224 patients aged 65-90 years diagnosed with muscle-invasive bladder cancer. Concurrent chemotherapy use was identified in Medicare claims. Clinical and sociodemographic predictors of concurrent chemotherapy use were identified using generalized linear model. We used Cox proportional hazards models to test whether concurrent chemotherapy use was associated with improved overall survival and cancer-specific survival. All statistical tests were two-sided.

Results: Use of radiation therapy increased significantly to 15.9% in 2004, and remained stable at 16.2% from 2004 to 2011. However, only 62.4% of patients who received radiation therapy also underwent concurrent chemotherapy over the study period. Predictors significantly associated with decreased likelihood of receiving concurrent chemotherapy were increased Charlson comorbidity index 3 versus 0 (OR: 0.90, 95% CI 0.83-0.99, p=0.027) and radiation oncologist per 1,000,000 population 25+ v 0 (OR 0.88, 95% 0.78-1.00, p=0.049). Presence of chronic kidney disease was not associated with receipt of concurrent chemotherapy. Concurrent chemotherapy, compared with no curative treatment, was associated with a mortality reduction of approximately 30% for both overall survival and cancer-specific survival when analyzed using the multivariable model.

Conclusions: This analysis confirms a survival benefit from concurrent chemotherapy in older patients diagnosed with bladder cancer; however, concurrent chemotherapy was not optimally utilized among elderly bladder cancer patients who underwent radiation therapy. Further research are needed addressing factors inherent to patient and provider treatment decision-making are needed.

UP.077

The Effects of Pelvic Dimensions on Postoperative of Radical Cystoprostatectomy and Ileal Orthotopic Neobladder Reconstruction

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Introduction and Objective: To determine the effects of pelvic dimensions on peroperative and postoperative estimated blood loss (EBL), transfusion rate (TR) and postoperative surgical complications during radical cystoprostatectomy and pelvic lymph node dissection.

Materials and Methods: Data from 72 male patients with preoperative pelvic magnetic resonance (MRI) were analyzed. Pelvic dimensions, including interspinous distance (ISD), bony (BFW) and soft tissue (SW) pelvic width, apical prostate depth, upper conjugate (UC), lower conjugate (LC) were measured by preoperative MRI. Indexes for pelvic dimensions (PDI), bony-width (BWI) and soft-tissue width (SWI) were defined as ISD/AD, BFW/PD, and SW/AD, respectively. As reflector of surgical difficulty, EBL and TR were assessed. Postoperative complications were graded according to the Clavien-Dindo classification system and were cathegorized into minor (<3 grade) and major complications (≥3 grade). SPSS version 17.0 was used for statistical analyses.

UP.077, Table 1. Descriptive Statistical Values

	Mean	SD	Min	Max
Age	60,46	11,46	28	81
EBL	1090	622,48	400	3600
TR	2,46	1,83	0	8
BDI	3,10	0,44	2,38	4,24
SWI	1,34	0,28	0,92	2,01
PDI	2,80	0,50	2,01	3,89

Results: Descriptive statistical values are shown in Table 1. According to the Clavien-Dindo classification system grade 1, 2, 3a, 3b, 4a and 4b was determined in 8.4%, 62.1%, 8.4%, 14.7%, and 6.3 %, respectively. The distribution for pathological stage was found as 25,9% for PT2a , 22,2% for PT2b, 41,7% for PT3a , 6,9% for PT3b and 2,8 % for PT3b and 1,4% for PT4b. Correlational analysis revealed no significant relationship between pelvic dimensions and parameters reflecting operative difficulty, except for EBL and UC (rs=-0.245, p<0.05). Statistically siginificance was found only for LC between the Clavien groups on Mann-Whitney U Test (p<0.05). None of parameters for operative difficulty were significantly associated with prostate volume (p<0.05).

Conclusions: Analyses of pelvic dimensions as significant factors influencing operative difficulty postoperative complication yielded interesting results. number This study is suggested as a preliminary report, our aim is to present more informative findings with ongoing and future studies.

UP.078

Adjuvant Chemotherapy for Node Positive Disease after Radical Cystectmy: Impact on Cancer Specific Survival (CSS)

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Introduction and Objectives: To study the impact of adjuvant chemotherapy (AC) on cancer specific survival (CSS) in patients with malignant lymph node involvement after radical cystectomy for urothelial bladder cancer.

Materials and Methods: The records of 1160 consecutive patients with urothelial carcinoma (UC) treated with radical cystectomy between January 2004 till February 2014 were reviewed. Patients with pathologic node positive disease were identified. The efficacy of AC versus observation was compared. Kaplan-Meier analysis with log rank test was used to estimate 5-year CSS.

Results: In total, 316 (27.2%) patients had node positive disease of whom 118 (37.3%) received AC. No significant differences were noted between both groups (Table1). Caboplatinum and Gemcitabin were given in 106 patients while 12 patients received Cisplatinum and Gemcitabin. Median number of AC cycles was 4 (1-5). Median follow up period was 15 months (0-132). During this period 131 (41.5%) developed local recurrence or distant metastasis. Median time

UP.078, Table 1. Clinicopathological Characteristics of 316 Patients with Nodal Positive Disease Treated with Radical Cystectomy

Variable	Adjuvant Chemotherapy		P. Value
	No	Yes	
Gender:			0.16
Male	171 (54%)	107 (34%)	
Female	27 (8.5%)	11 (3.5%)	
Age:			0.15
≤60 years	101 (32%)	68 (21.5%)	
<60 years	97 (30.7%)	50 (15.8%)	
ASA Score:			0.55
1	135 (42.8%)	75 (23.7%)	
2	49 (15.5%)	31 (9.8%)	
3	14 (4.4%)	12 (3.8%)	
Preoperative Hypoalbuminemia:			0.35
Absent	127 (40.2%)	88 (27.8%)	
Present	71 (22.5%)	30 (9.5%)	
Preoperative Anemia:			0.45
Absent	145 (45.9%)	85 (26.9%)	
Present	53 (16.8%)	33 (10.4%)	
Diversion:			0.4
Orthotopic	105 (33.2%)	66 (20.9%)	
Ileal conduit	90 (28.5%)	52 (16.4%)	
Histological Grade:			0.34
II	10 (3.2%)	4 (1.3%)	
III	188 (59.5%)	114 (36%)	
Pathologic T satge			0.7
Organ Confined	51 (16%)	29 (3.1%)	
Not Organ Confined	147 (46.5%)	89 (28.1%)	

to recurrence was 12 months (1-74). Overall, 5 year CSS was 43% for patients treated with RC alone vs 39% for patients received AC (P=0.6) (Fig 1). Patients with N1 disease who received AC had better 5 year CSS than those who did not receive (49.3% vs 45.5%), but the difference was not statistically significant (P = 0.2). On the other hand, the 5-year CSS for N2 disease patients who did not receive AC was 42.2% vs 35.4% for those who received AC (P = 0.8). On multivariate analysis, pathologic T stage (HR 1.8, 95% CI 1.2-2.8, P= 0.004) and number of positive lymph node (HR 1.05, 95% CI 1.01-1.08, P= 0.006) were significant predictors of CSS.

Conclusion: Adjuvant chemotherapy did not improve CSS of patients with urothelial carcinoma and lymph node metastasis. Predictors of survival were pathologic T stage and number of positive lymph nodes

UP.079

Accuracy and Prognostic Value of Variant Histology and Lymphovascular Invasion at Transurethral Resection of Bladder

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Introduction and Objectives: To evaluate the concordance rate of lymphovascular invasion (LVI) and variant histology (VH) of transurethral resection of bladder tumor (TURBT) with radical cystectomy (RC) specimens. Furthermore, to evaluate the prognostic value of LVI and VH at TURBT in predicting non-organ confined (NOC) disease, lymph node metastasis, and survival outcomes.

Materials and Methods: Two hundred sixty-eight patients who underwent TURBT and subsequent RC for clinically non-metastatic bladder cancer (BCa) at one institution were retrospectively reviewed. The presence of LVI and VH were determined in both TURBT samples and RC specimens. Logistic regression analyses were performed to evaluate the association of LVI and VH with NOC and/or lymph node metastasis at final pathology. Univariable and multivariable Cox-regression analyses were used to estimate recurrence-free survival (RFS), overall survival (OS) and cancer-specific survival (CSS). Discrimination ability was measured by the area under the receiver operating characteristic curve (AUC).

Results: Of the 268 patients, LVI and VH were detected in 13.8% and 11.2% of TURBT specimens, and in 30.2% and 25.4% of RC specimens, respectively. The concordance rate between LVI and VH at TURBT and subsequent RC were 69.8% and 83.6%, respectively. They were associated with adverse pathological features such as lymph node metastasis and advanced lymph node stage. TURBT LVI was independently associated with lymph node metastasis (p=0.033) while TURBT VH was independently associated with NOC and lymph node metastasis (p=0.02 and 0.037, respectively). On univariable Cox regression analyses, TURBT LVI was significantly associated with RFS and CSS (p=0.004 and 0.005, respectively) while TURBT VH was only associated with RFS (p=0.025). On multivariable analyses, only LVI was independently associated with RFS (p=0.036). TURBT specimens under-diagnose 78% of LVI and 60% of VH.

Conclusion: Detection of LVI is missed in third of TURBT specimens while VH seems more accurately identified by TURBT. Moreover, they were independently associated with disease and survival outcomes. Assessment and reporting of LVI and VH at TURBT samples are of paramount importance for proper risk stratification and subsequently patient counseling and decision-making.

UP.080

Single Stoma Tubeless Cutaneous Ureterostomy: A New Approach to an Old Operation

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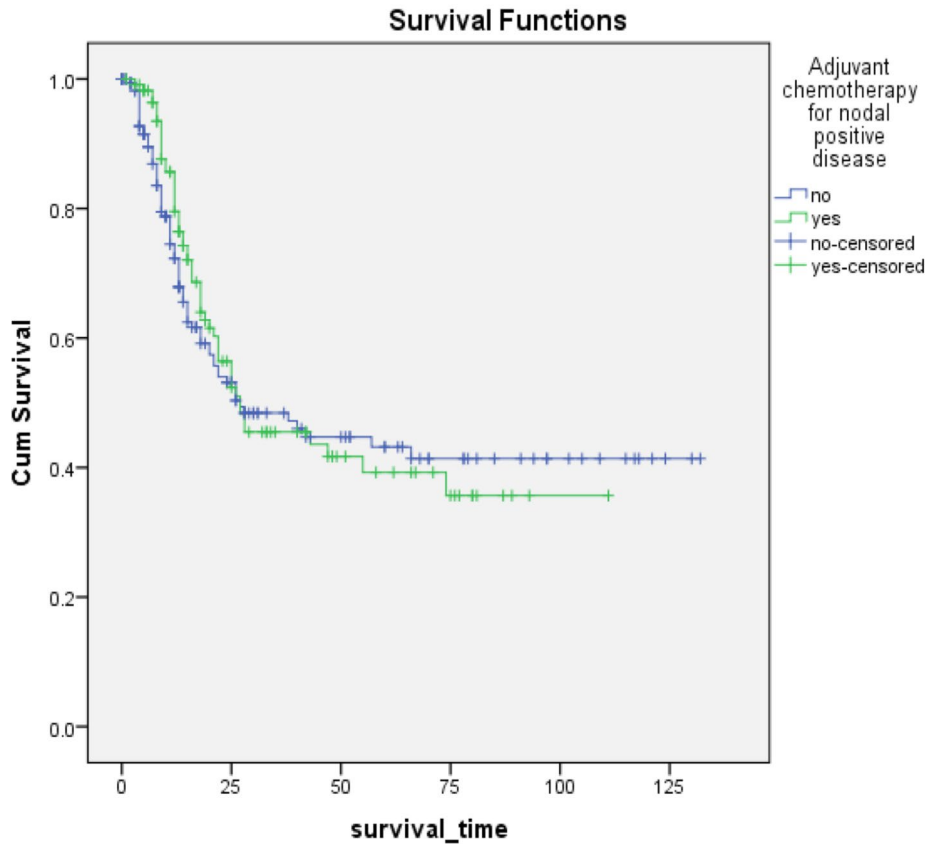
Introduction and Objective: Cutaneous ureterostomy is a well-established surgical technique of incontinent urinary diversion treatment, associated with the lowest rate of early postoperative gastrointestinal and metabolic complications. However, stenosis of the stoma itself limits widespread utilization of this technique, making ileal conduit the standard method for incontinent urinary diversion treatment. Present our technique of constructing single site tubeless cutaneous ureterostomy which could reduce complication related to the stomal stenosis and propose a competing alternative to ileal conduit.

Materials and Methods: Ten patients underwent the radical cystectomy followed by single stoma tubeless cutaneous ureterostomy. The main differences of our method from previously described techniques were a) the preservation of parietal peritoneum covering the ureters as a mean for better blood supply preservation and b) fixation of ureteral orifices one to another forming one oval shaped stoma.

Results: The surgery lasted from 150 to 240 minutes. No need for intra- or post-operative blood transfusion and no significant in-hospital complication were observed. Nine patients were free of obstruction for a follow-up period of 12 months. One patient developed a stricture of stoma and underwent reconstructive surgery. Conclusion: Cutaneous ureterostomy is a safe method,which is the preferred method of urinary diversion for morbid patients. Our results showed that modified single stoma tubeless cutaneous ureterostomy is less prone to the stomal stenosis. How-

UP.078, Figure 1. CSS for N+ve Patients Treated with Radical Cystectomy



ever, the results should be further replicated in larger-scale studies. This new technique could become a method of choice not only for morbid patients but also for patients who are candidates for ileal conduit.

UP.081

Clinical Outcome of Primary Small Cell Carcinoma of the Urinary Bladder in Japanese Patients

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Introduction and Objective: Small cell carcinoma of the urinary bladder is an uncommon tumor that exhibits aggressive behavior and accounts for less than 1% of all primary bladder tumors. The clinical outcome of patients with small cell carcinoma of the urinary bladder is not well known because the literature about its treatment and survival are mostly case reports. We report the characteristics and clinical outcomes of small cell carcinoma of the urinary bladder in Japanese patients.

Materials and Methods: We identified a total of 41 patients with primary small cell carcinoma of the urinary bladder between 1994 and 2015 at Yokohama City University and affiliated hospitals. Clinical, pathologic, and surgical data were retrospectively reviewed and analyzed.

Results: The median age of the patients was 69 years (interquartile range (IQR), 63-77 years) and the male-to-female ratio was 2.7:1. According to the Veterans Administration Lung Study Group (VALG) definition, 32 (78%) patients had limited disease (TxN0-1M0) and 9 (22%) had extensive disease (TxNxM1/TxN2-3M0). Twenty-one patients had a radical cystectomy and 29 patients were treated with chemotherapy. After a median follow-up of 28.0 months, 19 patients had died. The estimated median overall survival period was 34.7 months. The overall survival probability at 1 year, 3 years, and 5 years was 80.9, 49.4, and 42.8%, respectively. In multivariate analysis, increased serum NSE (p=0.014) and VALG definition (p<0.001) were found to be significant independent prognostic factors for overall survival.

Conclusions: Serum NSE and VALG definition were shown to be independent prognostic factors in small cell carcinoma of urinary bladder patients.

UP.082

Feasibility of Laparoscopic Radical Cystectomy in Elderly versus Younger Patients: A Comparative Analysis of Perioperative/Oncological Outcomes

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Introduction and Objective: Laparoscopic Radical Cystectomy (LRC) is one of the standard treatments for muscle-invasive bladder cancer (MIBC) and high-risk non-muscle-invasive bladder cancer (NMIBC). However, feasibility of LRC in high elderly patients is not yet clear. We performed a comparative analysis between elderly patients and a younger group who underwent LRC, assessing for perioperative/oncological outcomes.

Materials and Methods: We reviewed and compared 52 consecutive patients stratified as those above 75 years, and those below 75, who underwent LRC between October 2013 and March 2017. Both groups were assessed for perioperative outcomes, including surgical time, blood loss, complications, pathological findings, recovery, and oncological outcomes.

Results: Our cohort included 23 patients ≤75 years and 29 patients ≥75 years. Preoperative parameters (surgical indications and gender distribution) were similar in both groups. Operative time (median 485 vs 431 minutes), estimated blood loss (median 500 vs 320 mL), urinary diversion and pelvic lymphadenectomy were similar in both groups. Peri/postoperative complications of all grades were 34.8% vs. 27.6% (p=0.732), and over grade 3 were 17.4% vs 6.9% in the younger and elderly group, respectively. Median duration of hospital stay was 22 days in the younger and 23 days in the elderly group. One patient from the elderly group needed intraoperative open conversion due to hypercapnia. Positive surgical margin rates were also similar (13.0% vs 6.9% in the younger vs elderly group). Median follow-up period was 14.5 and 16.9 months for the younger and elderly group, respectively. The 2-yr overall survival rate was 65.7% in the younger vs 81.2% in the elderly group (p=0.189), and cancer-specific survival rates were 68.5% and 88.8% (p=0.085), respectively, in the two groups. There was a significant difference in progression-free survival rates between the younger and elderly groups (42.7% vs 84.6%, p=0.032).

Conclusion: In our study, there were no significant differences between both groups with respect to peri-surgical/ oncological outcomes. LRC in elderly patients was relatively safe and yielded good oncologic results. Thus, LRC is feasible even in elderly patients.

UP.083

External Validation of the Nomogram for Predicting 90-Day Mortality Following Radical Cystectomy in Japanese Patients

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Introduction and Objective: A previously published nomogram was developed to predict 90-day mortality in European patients undergoing radical cystectomy (RC). We aimed to determine the accuracy of this nomogram in patients undergoing cystectomy in Japan.

Materials and Methods: We reviewed our retrospectively collected database of 744 patients who underwent RC for bladder cancer at 21 Japanese institutions between 1997 and 2010. The 90-day mortality nomograms described by Aziz et al. (Eur Urol 66:156, 2014), based on age, American Society Anesthesia Score

(ASA), metastatic disease, and hospital volume, were used to calculate probabilities of 90-day mortality following RC for all patients. The area under the curve (AUC) was determined to assess agreement between observed and expected outcomes for prediction of 90-day mortality.

Results: Patient and tumor characteristics of the validation Japanese cohort in relation to the model-development European cohort of Aziz et al. were provided in Table 1.There were a total of 54 deaths within 90 days in the model-development cohort (9.0%) compared with 9 in the Japanese cohort (1.2%, $p < 0.01$). Predictive performances of the nomogram revealed AUC of 0.79 for the Japanese cohort. The predictive values of these models were comparable to that of the model-development cohort (AUC = 0.79).

Conclusion: The predictive accuracy of this nomogram for predicting 90-day mortality in Japanese patients was comparable to that of the development model. This nomogram appears to be reliable and suited for preoperative patient counseling in Japan.

UP.084

Clinical Outcomes of Transperitoneal Ureterocutaneostomy Using Sigmoid Mesentery

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Introduction and Objectives: Ureterocutaneostomy is the simplest method of urinary diversion. Nevertheless, traditional cutaneous ureterostomy may lead to a series of adverse effects, such as stomal stenosis, ureter elongation, increased ureteral tension, etc. Ideally, permanent urinary diversion should be able to prevent post-operative complications, preserve renal function and enable patients to lead normal live, especially in patients with advanced disease. The aim of our study was to develop surgical modification that could improve outcomes of cutaneous ureterostomy.

Materials and Methods: Of 359 patients who underwent cystectomy between 2011 and 2016, in 64 (17.8%) patients due to cytoreductive or salvage surgery, both ureters were used to construct the single cutaneous ureterostomy. The patients were divided into two groups according to the model of ureteral transposition. In group 1 (25 pts.), the distal ends of the ureters were brought throughout retroperitoneum onto the right iliac region. In group 2 (39 pts.) cutaneous ureterostomy included transposition of the ureters throughout the mesentery root to mesosigmoid colon. Then, the tunnel was formed beneath the visceral peritoneum of the mesosigmoid, which distally opened at the distance of 2 cm from colon. Both ureters were passed through this tunnel and their ends were exteriorized through the opening in the left abdominal wall - anti-McBurney point. The ends of ureters were anastomosed with the skin in modified X-shaped technique forming single cutaneous ureterostomy and preventing stomal stenosis. In both groups the ureters were intubated with stents. Preoperative clinical characteristics as well as intra- and early postoperative (<90 days after surgery) data were evaluated and compared between two groups.

Results: The groups were comparable with regards to age, gender, ASA score, surgery indications, pathological features, operation time, estimated blood loss and length of hospital stay. Nevertheless group 1 had a significantly higher rate of stomal or ureteral stenosis (64% vs 17.9%) that electively required Bricker diversion ($p<0.05$), lower average total GFR level (42.1 + 6.3 vs 54 + 7.8 ml\min ($p<0.05$)) and higher serum creatinine level (1.42 + 0.26 vs 1.18 + 0.19 mg\dl ($p<0.05$)). Moreover, second group ureterostomy according to our technique did not require ureteral stenting in 71.8 % of cases ($p<0.001$).

Conclusions: Our results suggest that transperitoneal ureterocutaneostomy using the sigmoid mesentery is an effective and simple way to improve the results of cutaneous ureterostomy.

UP.085

A Modified Orthotopic Neobladder Reconstruction after Radical Cystectomy: Technical Point and Intermediate-Term Outcome

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Introduction and Objective: Orthotopic neobladder reconstruction has become an increasingly common urinary diversion following cystectomy for bladder cancer. This study aims to introduce a modified orthotopic neobladder reconstruction method after radical cystectomy, its technical points and intermediate_term outcomes.

Materials and Methods: Between 2012 and 2015, patients with bladder cancer were enrolled in this study, assigned to undergo a new pouch diversion after radical cystectomy. Patients were asked for routine follow ups at 6 weeks, 3 and 6 months after surgery. Items including urinary function, intermittent catheterization, anuresis, stress leakage, urinary frequency, nocturia, upper urinary system complications and sexual function were evaluated in all patients during post-op follow ups.

Results: Of all the 12 patients (11 male, 1 female), no one had a positive Pad test result. None of the male patients needed Clean intermittent Cathetarization (CIC) up to 6 months of follow up. Anuresis results were negative for all of the patients after 6 months. Only 25% of patients had 2-3 times of nocturia after 6 months. At 6 month follow up, sexual function was desirable for 77% of the patients. No upper urinary system complications (including hydronephrosis, rise in serum BUN and creatinine) were reported after 6 months.

Conclusion: Regarding our results, this new method of surgery can be an optimal procedure for neobladder reconstruction following cystectomy for bladder cancer.

UP.086

Oncological Outcomes and Survival in Pt0/Pt1/Pta Tumors after Radical Cystectomy due to Urothelial Carcinoma of the Bladder

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Introduction and Objectives: We assessed outcomes in patients with pT0, pT1 and pTa, in the cystectomy specimen following radical cystectomy for transitional cell carcinoma, our objective was to identify prognostic risk factors and survival.

Materials and Methods: We reviewed retrospectively the records of a single-institution and found 330 patients treated with radical cystectomy for bladder urothelial carcinoma without neoadjuvant chemotherapy between October 1999 and June 2015. We selectively analyzed the clinical records of 49 post-cystectomy pT0/pT1/pTa patients for the following variables: carcinoma in situ, lymphovascular invasion, history of non-muscular invasive disease, the delay between transurethral resection and radical cystectomy, residual tumor in the specimen and lymphatic invasion (pN). The quantitative and qualitative variables were analyzed using standard statistics. The Kaplan-Meier method was used to evaluate survival and the log-rank test to assess differences between groups. Statistical significance was set at $p<0.05$. The analysis was performed using SPSS version 22.0.

Results: The study sample included 49 cases. The median age was 60 years. All of the patients were male. The specimen was staged at T2 in 57% of patients after transurethral resection. After cystectomy, the specimen was staged as pT0 in 38.8% and pT1/Ta in 61.2%. The time from TUR to cystectomy was 3.8 (1-17) months. Median follow-up was 53 months. Lymph node metastasis were detected in 6.1% of patients (pN+) and had a negative impact on survival ($p=0.02$). Overall survival was 89.8%, and cancer-specific survival was 83.3%. Eight patients (16.36%) developed tumor progression. An increased delay between the last bladder tumor resection and cystectomy, and T2 stages at endoscopy were the factors found to be associated with reduced disease-free survival ($p = 0.01$), disease-specific survival ($p = 0.003$) and overall survival ($p=0.001$).

Conclusion: Although the prognosis of stage pT0/pT1/pTa carcinoma in the cystectomy specimen is excellent, some patients experience progression. The increased delay between the last bladder tumor resection and T2 initially staged cystectomy were independent predictors of poor prognosis in our study.

UP.087

Predictive Role of Epithelial Tumor Marker Level Elevation at Follow-Up for Tumor Recurrence and Oncological Outcomes in Urothelial Bladder Cancer

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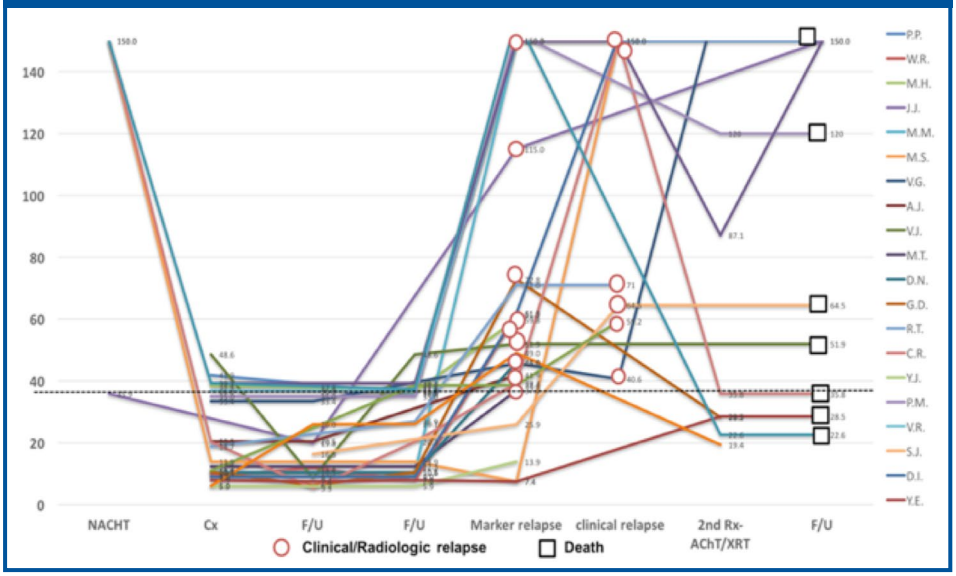
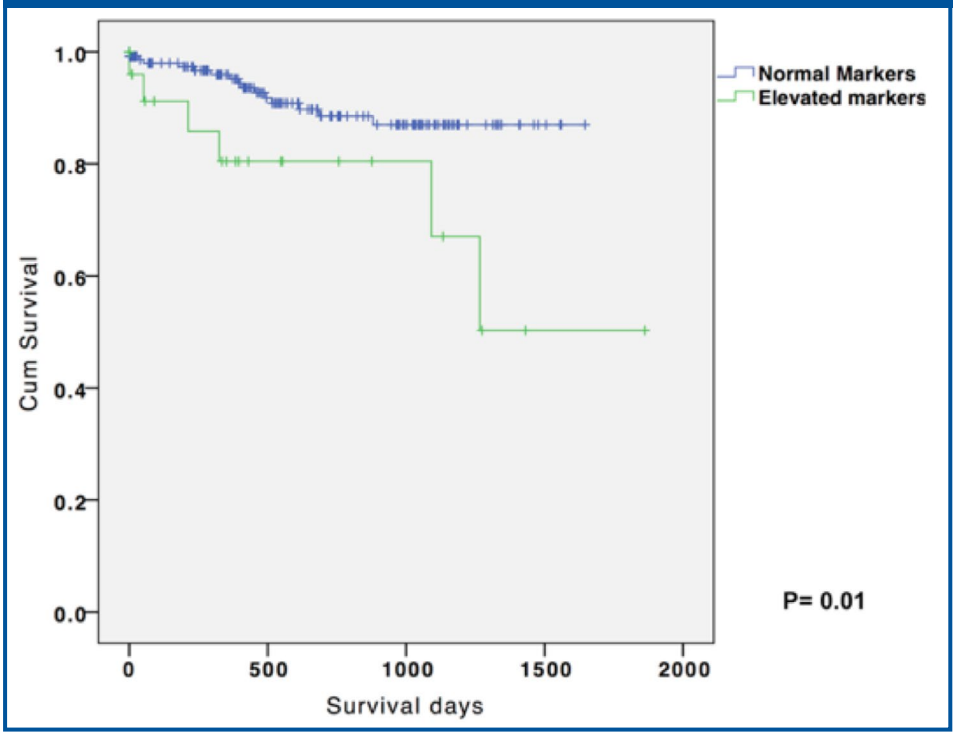
UP.087, Figure 1. Details of the Prominent Tumor Marker's Course in the 23 Patients with Marker Relapse followed by Clinical Recurrence



UP.087, Figure 2. Cancer-Specific Survival Comparison between Study Groups using Landmark Survival Analysis



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Introduction and Objectives: We have previously reported that elevated pre-cystectomy serum levels of epithelial tumor markers (TM) are associated with worse oncological outcome in patients with invasive urothelial bladder cancer (UBC). Also, we reported that TM response to neoadjuvant chemotherapy (NAC) is associated with oncological outcomes. Herein, we evaluate elevation of TM levels during follow-up and their predictive role in tumor recurrence.

Materials and Methods: Under IRB approval, serum levels of Carbohydrate Antigen 125 (CA-125), Carbohydrate Antigen 19-9 (CA 19-9) and Carcinoembryonic Antigen (CEA) were prospectively measured in 409 patients with invasive UBC between August 2011 and August 2016. Excluded from the study were metastatic (13), palliative or inoperable (5) cases. Markers were measured at different time points during the course of treatment and follow-up, and patients with tumor marker relapse were observed closely for signs of recurrence.

Results: A total of 391 cystectomy patients were included in the study with median age of 71 years and 79% males. Pathology was organ-confined in 59%, extravesical in 19% and node-positive in 22%. NAC was given in 35% of population. Elevated precystectomy level of any of the tumor markers (31% of patients) was independently associated with worse RFS ($p<0.001$; HR=2.81) and OS ($p<0.001$; HR=3.97). After completion of cystectomy, we could document normal serum marker levels from 288 cases, of whom 27 patients (9%) developed tumor marker relapse later during follow up. This subset showed significantly more clinical recurrences (89% in elevated vs. 12% in stable group, RR= 7.41), and death (26% vs. 7%, RR=3.4). Median time from tumor marker relapse to clinical recurrence was 46 days (IQR 0-179), and median time to mortality was 308 days (IQR 119-574) days. Details of tumor markers course in the 24 patients with marker relapse followed by clinical recurrence is shown in figure 1. Further Survival analysis using landmark time-point with log rank showed there is a significant difference in cancer-specific survival between the groups (median 284 vs 547 days; $p=0.01$) (Figure 2).

Conclusions: To our knowledge, this is the first pilot study showing predictive role of epithelial tumor marker for recurrence of invasive urothelial bladder cancer. The results of this cohort suggest that patients with marker relapse following cystectomy are at significant increased risk of recurrence and mortality. A larger, controlled study with longer follow up is needed to determine their role in predicting survival.

UP.088

Early Outcome of Post Radical Urologic Pelvic Surgery-Patients Admitted to Intensive Care Unit (ICU) in Perioperative Period

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Introduction and Objective: The aim of our study to evaluate ICU mortality rates and lenghth of hospital stay (ICU LOS) in radical urologic pelvic surgery-patients admitted to ICU in the perioperative period of radical pelvic surgery. And also to evaluate current risk stratification protocols used for patient assessment and ICU triage following radical pelvic surgery.

Materials and Methods: Retrospective study performed on all adult patients who were admitted to the critical care unit in the perioperative period of radical pelvic surgery in the period from Jan 2014 to June 2015 with exclusion of patients younger than 18 years old, patients older than 80 years old and patients with less than 24h ICU length of stay. Collected data includes the following ; age, gender, nature of surgery, comorbidities, ASA physical status, Surgical Apgar score, first day worst vital signs, urine output, ABG, serum electrolytes, CBC, renal functions, liver functions, nature of ICU admission (planned or emergency), ICU LOS, ICU outcome (cure or death) and possible causes of death. Collected data was used to calculate ASA score, Surgical Apgar score (SAS), APACHE II Score and SAPS II score. Data Classifica-

UP.088, Table 1. Comparisons of ICU LOS and Evaluation Scores in Different ICU Outcomes

Variables	ICU outcomes		p-value	Sig.
	Cure (n=105)	Death (n=10)		
	Mean ± SD	Mean ± SD		
- ICU LOS (days)	3.3 ± 2.1	5.3 ± 3.6	0.01	S
- ASA score	2.7 ± 0.6	2.5 ± 0.5	0.2	NS
- APGAR	5.5 ± 1.3	3.7 ± 1.8	<0.001	S
- APACHE II	9.8 ± 5.3	27 ±8	<0,001	S
- SAPS II	11.6 ± 6.5	33.7 ± 8.5	<0,001	S

UP.088, Table 2. Comparisons of Evaluation Scores Categories in Different ICU Outcomes

Variables		ICU outcomes				OR (CI)	p-value	Sig.
		Cure (n=105)		Death (n=10)				
		No.	%	No.	%			
ASA score	<3	31	86.1%	5	13.9%	0.42 (0.11-1.6)	0.28	NS
	≥3	74	93,7%	5	6,3%			
- APGAR	>6	22	100%	0	0%	1.1 (1-1.2)	0.21	NS
	≤6	83	89.2%	10	10.8%			
- APACHE II	<25	102	97.1	3	2.9%	79.3 (13.4-467.7)	<0.0001	S
	≥25	3	30%	7	70%			
- SAPS II	<30	98	98%	2	2%	56 (9.9-315.5)	<0.0001	S
	>30	7	46.7%	8	53.3%			

tion: we classified data into groups: The cut-off value for significance was P â‰¤ 0.05.

Results: The total number of patients enrolled in our study was 115. The mortality rate in ICU was 8.7% (10 out of 115 patients). The different causes of deaths included in the study were sepsis, pulmonary embolism, pneumonia, ARDS, hemorrhage and ARF. Non-survivors (death) have significantly higher mean ICU LOS, APACHE II and SAPS II scores and significantly lower mean SAS Table (1). High mortality rates were detected among cases of patients with APACHE II â‰¥ 25 (70%) and SAPS II score â‰¥ 30 Table (2). Low mean of SAS and high mean of APACHE II and SAPS II score were detected among patients who stayed more than 7 days. The best score in prediction of ICU mortality was APACHE II score with sensitivity of 90%, specificity of 93.3% and accuracy of 97.2%. The cutoff point was 17.

Conclusions: Surgical Apgar score, APACHE II score and SAPS II score are strongly recommended tools for predicting high mortality risk during perioperative period of major radical urologic pelvic surgeries. Further prospective research on larger number of patients is needed to help facilitate optimal care for surgical patients.

UP.089

Factors that Predict Neutropenia in Korean Patients with Advanced Urothelial Cancer

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Introduction and Objective: The aim of this study was to identify factors that can be used to predict severe neutropenia (grade 3 or higher) in patients with advanced urothelial cancer after cisplatin-based systemic chemotherapy.

Materials and Methods: The study examined 79 Korean patients with advanced urothelial cancer who were treated with several cycles of cisplatin-based systemic chemotherapy from May 2006 to May 2015. Risk factors for neutropenia (grade 3 or higher) and for the occurrence of neutropenia (grade 3 or higher) during the first cycle of chemotherapy were examined.

Results: Thirty-six out of the 79 patients (45.6%) developed neutropenia at grade 3 or higher during the first cycle of cisplatin-based systemic chemotherapy: 18 (22.7%) of these experienced grade 3 neutropenia and 18 (22.7%) experienced grade 4. Multivariate analysis identified pretreatment neutrophil counts (p = 0.001) as the only significant factor predictive for severe neutropenia.

Conclusions: The pretreatment neutrophil count was found to be the factor that poses a significant and independent risk in development of severe neutropenia induced by applying cisplatin-based systemic chemotherapy to patients with advanced urothelial cancer.

UP.090

Identification and Validation of C1orf198 as an Independent Marker of Bladder Cancer Metastasis in SEER and TCGA Database

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Introduction and Objective: Determination of metastasis biomarkers is urgent in the management of bladder cancer (BC). With the existing models predicting BC metastasis, we found two deviant groups that are unpredictable with clinical parameters. One is at high risk of pN+ but actually with pN0 (good prognosis group, G) and the other one is at low risk of pN+ but actually with pN+ (poor prognosis group, P). The present study aimed to determine the gene expression differences between these two groups with SEER and TCGA database and validate the results in our own cohort.

Materials and Methods: One thousand six hundred and three patients with radical cystectomy (RC) from the SEER database were enrolled to build a multivariate model predicting BC metastasis. This model was applied in 248 patients from TCGA database to distinguish these two deviant groups (G and P). The different expressed genes of the two groups were compared by t-test. RT-qPCR was applied to validate the results in a consecutive cohort of 127 BC patients from Fudan University Shanghai Cancer Center who underwent RC between 2011 and 2015.

Results: The multivariate logistic regression model based on SEER population identified 256 patients as group G and 76 patients as group P. The similar phenomenon was observed in TCGA database with 37 patients of group G and 17 patients of group P respectively. One hundred and eighty three genes showed significant difference between these two groups. Finally, 18 genes achieved a significant statistical power (P<0.05) in predicting lymph node metastasis in the TCGA cohort excluding these two deviant groups. Furthermore, the RT-qPCR results of our own cohort identified C1orf198 (P=0.04) as the only gene that expressed differently in the two groups.

Conclusion: Our study provided an exquisite method to screen genes between two extreme populations, and identified C1orf198 as a potential metastasis promoter in bladder cancer.

UP.091

Discerning Predictors for Gender Differences in Survival Outcomes for Patients Treated for Bladder Cancer

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Introduction and Objective: Radical cystectomy (RC) is an underutilized treatment option for those with refractory non-muscle invasive and muscle-invasive bladder cancer; however, use of RC may differ ac-

UP.090, Table 1. Demographic Characteristics of Patients in SEER, TCGA and FUSCC Cohorts

	SEER		TCGA		FUSCC	
Characteristic	**NO**	**%**	**NO**	**%**	**NO**	**%**
Age, year						
Median(IQR)	69(61-76)		70(61-77)		63(57-70)	
Gender						
Male	1185	73.9	177	71.4	108	11.1
Female	418	26.1	71	28.6	19	88.9
Races						
White	1410	88.0	NA	NA	0	0
Black	92	5.7	NA	NA	0	0
Other	101	6.3	NA	NA	127	100
Primary site						
Trigone of bladder	143	8.9	24	9.7	NA	NA
Dome of bladder	93	5.8	18	7.3	NA	NA
Wall of bladder	624	38.9	100	40.3	NA	NA
Bladder neck	55	3.4	3	1.2	NA	NA
Ureteric orifice	34	2.1	0	0	NA	NA
Bladder,NOS	654	40.8	103	41.5	NA	NA
Grade						
Low grade	NA	NA	0	0	6	4.7
High grade	NA	NA	248	100	121	95.3
1	2	0.1	NA	NA	NA	NA
2	31	1.9	NA	NA	NA	NA
3	563	35.1	NA	NA	NA	NA
4	1007	62.8	NA	NA	NA	NA
T stage						
2	606	37.8	66	26.6	61	48.0
3	732	45.7	139	56.0	41	32.3
4	265	16.5	43	17.3	25	18.7
Tumor size, mm						
Median(IQR)	40(25-52)		NA		NA	
Regional nodes examined count						
Median(IQR)	11(6-18)		18(11-30)		9(7-12)	
Lymph nodes status						
Negative	1170	69.1	152	61.3	85	66.9
Positive	496	30.9	96	38.7	42	33.1
AJCC stage						
II	456	28.5	54	21.8	55	43.3
III	603	37.6	96	38.7	40	31.5
IV	544	33.9	98	39.5	32	25.2

NA: not available

cording to gender. We wanted to discern receipt and timing of RC as well as survival outcomes according to gender.

Materials and Methods: A total of 49,974 patients aged 66 years or older diagnosed with clinical stage TI-IV N0M0 bladder cancer from January 1, 2001 to December 31, 2011 from SEER-Medicare data were analyzed. We used multivariable regression analyses to identify factors predicting the use and delay of RC. Cox proportional hazards models were used to analyze survival outcomes.

Results: Of the 49,974 patients diagnosed with bladder cancer 13,015 (26.0%) were female. Women were significantly more likely to undergo RC across all stages compared to their male counterparts (Stage I: Relative Risk (RR) 1.53, 95% Confidence Interval (CI) = 1.27-1.84, P < 0.001; Stage II: RR 1.52, 95% CI = 1.37-1.70, P < 0.001; Stage III: RR 1.26, 95% CI = 1.15-1.39, P < 0.001; Stage IV: RR 1.37, 95% CI = 1.17-1.47, P < .001). Moreover, there was no significant difference in delay to RC except women with Stage IV disease were less likely to have delay to RC than men (RR 0.67, 95% CI = 0.62-0.95, p=0.017). Using propensity score matching, women had improved overall (HR 0.85, CI 0.82-0.88, P<0.001), but worse cancer-specific survival (HR 1.08, CI 1.02-1.15, P=0.008) than men, respectively.

Conclusion: Gender differences persist with women significantly more likely to undergo RC independent of clinical stage. However, women have significantly worse cancer-specific survival than men. Delay from diagnosis to surgery did not account for this decreased survival among women.

UP.092

Pathology in Repeated Transurethral Resection of a Bladder Tumor as a Risk Factor for Prognosis of High-Risk Non-Muscle-Invasive Bladder Cancer

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Introduction and Objective: To estimate the prognostic value of repeated transurethral resection of bladder tumor (TURBT) in patients with diagnosed high-risk non-muscle-invasive bladder cancer (NMIBC).

Materials and Methods: We retrospectively reviewed the medical records of patients treated from October 2004 to December 2013 at Seoul National University who underwent repeated TURBT (re-TURBT) within 2–6 weeks after an initial resection. We used stepwise multivariate Cox regression models stratified by study to assess the independent effects of the predictive factors and estimated hazard ratios (HRs) from the Cox models.

Results: We investigated a total of 198 patients who were diagnosed with high-risk NMIBC. In logistic regression analyses, number of bladder tumors (2–7: OR, 2.345; 8 ≤: OR, 3.326; p<0.05), initially high tumor grade (OR, 2.508; p=0.033), and presence of carcinoma in an in situ lesion (OR, 3.794; p=0.027) correlated with residual tumor in the re-TURBT specimen. T1 stage in re-TURBT significantly correlated with recurrence (HR, 1.837; p=0.017) and progression (HR, 2.152; p=0.008) in multivariate analysis. The high grades of tumors in repeated TURBT also significantly correlated with progression but not recurrence in the multivariate analysis (HR 2.152; p=0.008).

Conclusion: In this study, the pathologic findings in repeated TURBT correlated with recurrence and progression in high-risk NMIBC. Repeated TURBT is valuable because it can predict the recurrence and progression of high-risk NMIBC in addition to obtaining accurate pathologic findings.

UP.093

Prognostic Value of Initial Neutrophil Lymphocyte Ratio in Muscle Invasive Bladder Cancer Patients

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Introduction and Objective: To examine the prognostic value of neutrophil lymphocyte ratio (NLR) in muscle invasive bladder cancer (MIBC) patients.

Materials and Methods: This retrospective multicenter study was conducted in 2 centers in Indonesia. All patients who admitted in two center hospital between January 2014 and September 2016, histologically confirmed MIBC including in this study. Complete staging of MIBC by pathological staging (histological examination), clinical staging during transurethral resection of bladder tumor or radical cystectomy and computed tomography or magnetic resonance imaging. NLR counted from the first time patients came to hospital. All of patients get same standard of care for MIBC (Indonesian Urological Association guidelines on MIBC) and followed-up until death or last at 30th September 2016. The primary end point was overall survival, which was measured from the day of histological diagnosis.

Results: There were 206 patients who met the selection criteria, with mean age 56,84±11,88 years old, 172 (83,5%) patients are men. Of the 206 cases, 93 (45.1%) patients came in locally stage (T2-T4a without lymphnode and distant metastasis), 78 (37.9%) patients came in locally advanced stage (T4b or with lymphnode metastasis) and 35 (17%) patients came in advanced stage (distant metastasis). Majority 87(42.2%) patients received curative resection (radical cystectomy), 25 (12.1%) patients received radical cystectomy and adjuvant chemotherapy, 51 (24,8%) patients received combination chemotherapy and external radiation, only 43 (20,9%) patients received chemotherapy alone. Overall survival for all patients are 25.081 (23.8-26.2, CI 95%) months, patients who had NLR less than 3 had significantly better overall survival compared to the patient who had NLR greater than 3 (32.93 months (31.64-34.22) vs 20,97 months (19.8-22.13), p 0.000, CI95%). NLR also correlate significantly with stage of tumor (p 0.000, R 0.257) and histological grading of tumor (p 0.002, R 0.211). Multivariate regression analyses revealed that NLR more than 3 were significantly associated with bad prognosis (HR 11 607, 95% CI : 7,05-19,09, p 0.000).

Conclusions: We verified the results of previous studies, and showed that NLR had prognostic value in a Indonesian MIBC patients.

UP.093, Table 1. Basic Demographic Data

No	Variable	Mean ± SD/ frequency (%)
1	Age (years)	56,84 ± 11,8
2	Initial haemoglobin level (mg/dL)	11,02 ± 2,04
3	Initial creatinine level (mg/dL)	2,4 ± 2,89
4	Initial lymphocyte count	1994,01 ± 2573,9
5	Initial neutrophille count	10392,77 ± 13752,09
6	NL ratio	7,74 ± 10,81
7	Sex	
	Male	172 (83%)
	Female	34(16,5%)
8	Stage	
	Locally	93 (45,1%)
	Locally advanced	78 (37,9%)
	Metastatic	35 (17%)
9	Histological grade	
	PUNLMP	51 (24,8%)
	Low grade	73 (35,4%)
	High grade	82 (39,4%)
10	Treatment	
	Radical cystectomy	87 (42,2%)
	Radical cystectomy + chemotherapy adjuvant	25 (12,1%)
	Chemoradiation	
	Chemotherapy	51 (24,8%)
		43 (20,9%)

UP.094

Orthotopic Neobladder Constructed of Shorter Ileal Segment - "Belgrade Pouch"

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Introduction and Objective: Many surgical techniques try to create neobladder as simmilar as native blader is. We present results of original surgical procedure with usage of shorter ileal segment for ortotopic neobladder substitution.

Materials and Methods: One hundred and seventy four males and 28 female patients were operated between 2009 and 2017 year, according to "Belgrade Pouch"technique."U"shaped neoblader was constructed of ileal segment average length of 28 (24-32) cm. Direct uretero-pouch anastomosis was performed. We report early and delayed complcations in 3 years follow up period, and we excluded pts with diabetes mellitus, HOBP, systemic ilness and chemotherapy.

Results: Average age of pts was 62 (42-78). Indication for operations was muscle invasive bladder cancer in 89 % of pts. Average duartion of operation was 197 (128-365) min. 32% of pts have blood transfusion during surgery, average 440 (0-990) ml. High body temperature ≥38°C appears in 1.8% pts during hospitalisation; 3.5% have paralytic ileus which was resolved conservatively. In 1% we reported urinary fistulas managed conservatively and 1.8% of wound dehiscency. Mean hospital stay following the surgery was 16 (12-24) days. Delayed complications and resalts are showen in Tabel No 1.

Conclusion: Neobladder "Belgrade pouch" constructed of shorter ileal segment in average lenght less than 30 cm may obtein excellent capacity and continence, favorable frequency and decrease delayed methabolic complications.

UP.095

Outcomes of Pathological T0 Disease Following Radical Cystectomy for Urothelial Cell Carcinoma

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Introduction and Objectives: Radical cystectomy (RC) can be a morbid operation with variable outcomes. We evaluated the association of pathological T0 with characteristics and outcomes of patients treated with RC for urothelial cell carcinoma (UCC) of the bladder.

Materials and Methods: A prospective database was established in 1994 and patients who underwent a radical cystectomy (RC) between 1994 and 2016 were reviewed. Only RC pT0 were analysed, the primary end-point was survival.

Results: A total of 1279 RC were performed, 1110 were performed for UCC and 232 (29.9%) RC specimens revealed pT0 disease. The Median (IQR) follow-up was 40.2 (20.5-68.1) months. There were 38 (16.4%) deaths; 20 (52.6%) and 13 (34.2%) patients had pre-RC transurethral resection (TUR) stage pT1 and pT2 respectively. Overall, 83 patients had TUR pT2 disease of which 35 (42.2%) patients received neoadjuvant chemotherapy. A total of 13 (15.7%) deaths occurred in patients with TUR pT2 disease and none of which received neoadjuvant chemotherapy (Chi-square p<0.001). Two patients (TUR pT1

UP.093, Table 2. Data Characteristic Based on NLR

No	Variable	Mean ± SD/ frequency (%)	
		NLR >3 (137 patients)	NLR≤3 (69 patients)
1	Age (years)	58,1 ± 10,7	54,33 ± 13,5
2	Initial haemoglobin level (mg/dL)	10,82 ± 1,84	11,42 ± 2,35
3	Initial creatinine level (mg/dL)	2,83 ± 3,4	1,75 ± 1,11
4	Initial lymphocyte count	1781,5 ± 2521,83	2415,94 ± 2642,26
5	Initial neutrophille count	13349,34 ± 15946,05	4522,46 ± 3001,72
6	Sex		
	Male	113 (82%)	59 (85%)
	Female	24 (18%)	10 (15%)
7	Age		
	<60 years old	80 (58%)	44 (63%)
	>60 years old	57 (48%)	25 (37%)
8	Stage		
	Locally	54 (39%)	39 (56%)
	Locally advanced	54 (39%)	24 (34%)
	Metastatic	29 (22%)	6 (10%)
9	Histological grade		
	PUNLMP	32 (23%)	19 (27%)
	Low grade	45 (32%)	28 (40%)
	High grade	60 (45%)	22 (33%)
10	Treatment		
	Radical cystectomy	54 (39%)	33 (47%)
	Radical cystectomy + chemotherapy adjuvant		
	Chemoradiation	12 (8%)	13 (18%)
	Chemotherapy		
		37 (27%)	14 (20%)
		34 (26%)	9 (15%)

UP.093, Table 3. Correlation between NLR and Staging and Histological Grading

No	Variable	p	r
1	NLR and stage	0,000	0,257
2	NLR and histological grading	0,000	0,211

UP.093, Table 4. Overall Survival Rate Patients with Bladder Cancer Based on NLR

No	Variable	Overall Survival (months)	Survival NLR >3 (months)	Survival NLR ≤3 (months)	p
1	NLR	25,08	20,97	32,93	0,000

and pT2) had positive surgical margins and both died during follow-up. On multivariate analysis, the predictors of poor survival outcome in RC pT0 disease include age (HR 1.06, p=0.01), TUR pT2 (HR 1.75, p=0.04) and TUR Cis (HR 1.75, p=0.04).

Conclusion: At a median follow-up of 40.2 months, the overall survival for RC T0 disease was 83.6%. Re-resection in combination with neoadjuvant therapy should be considered in patients with pre-RC pT2+/-Cis disease to improve survival outcome.

UP.096

Do Power Settings Affect the Rate of Diathermy Artefacts in Monopolar TURBT?

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Introduction and Objective: Quality of transurethral resection of bladder tumours is determined by histopathology of resected specimens. Diathermy artefacts are unfavourable as thermal damage affects accurate diagnosis and staging. The rate of monopolar TURBT artefacts with varied power settings is not widely reported. We aim to evaluate the impact of diathermy power settings on histopathology of monopolar TURBT specimens.

Materials and Methods: A total of 201 TURBT specimens between 2013 and 2016 were retrospectively assessed. Tumour characteristics including size and number of tumours were recorded for each specimen. Histopathological grade, stage and presence of muscle were evaluated. Data was divided into three groups according to the Cutting/Coagulation power settings used for resection; Group 1: 120/40W (n = 51); Group 2: 120/50W (n = 116) and Group 3: 160/60W (n = 34). Statistical analyses including analysis of variance (ANOVA) were performed to compare the groups.

Results: All three groups were statistically similar with respect to tumour characteristics. Muscle was present in 75% of all the specimens (Group 1: 82%; Group 2: 74% and Group 3: 68%). Overall rate of diathermy artefact was 20% with severe artefact reported in 12 (6%). Group 2 (120/50W) showed highest diathermy artefacts with 32 out of 116 (27.5%) specimens. Group 3 (160/60W) had only 6% (2 out of 34) specimens with artefacts, whereas Group 1 (120/40W) had 11.7% (6 out of 51) artefacts.

Conclusion: Quality of resections using monopolar diathermy is good with an acceptable diathermy artefact rate. In our study, higher monopolar power settings were associated with lower incidence of diathermy artefacts. Further studies are required to establish the optimal power settings, so that thermal damage is reduced in TURBT.

UP.097

Evaluation of the Dwell-Time Difference in Intravesical Bacillus Calmette-Guèrin Therapy

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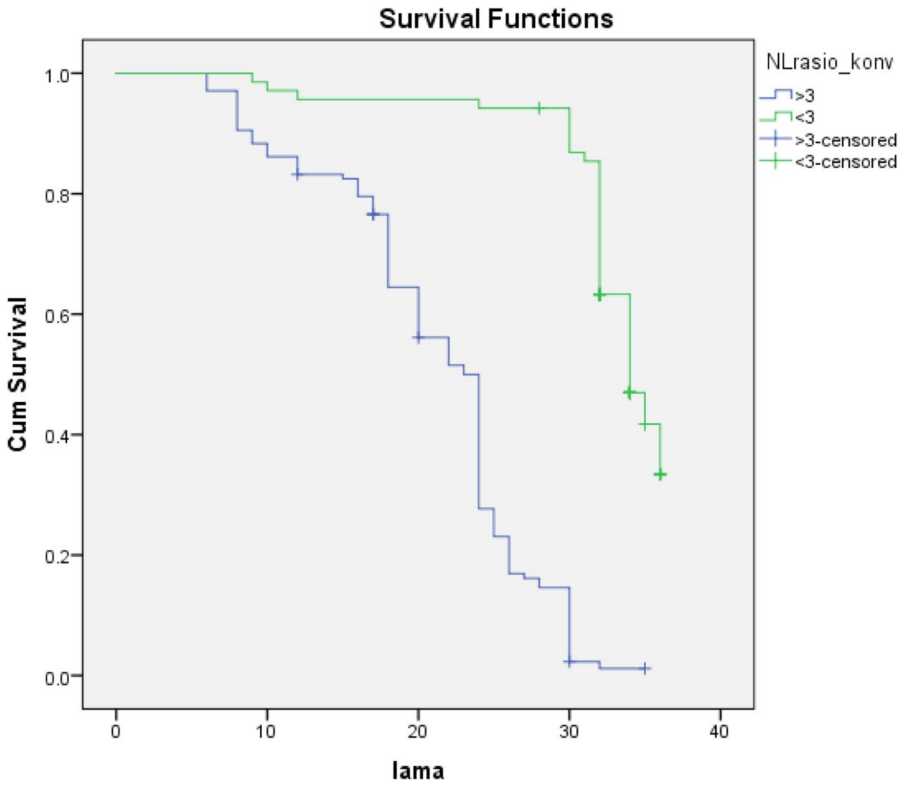
Introduction and Objective: Because of the high incidence of side-effects with bacillus Calmette-Guèrin (BCG) intravesical therapy, low-dose administration is currently established. Owing to the complications associated with the long dwell time after injection, some facilities are shortening the dwell time. We have been instructing our patients to urinate 1 hour after BCG instillation (1 hour earlier than previously), and the results are not inferior compared with those of other facilities. On the other hand, involved in the multicenter study of BCG low-dose administration, we have performed 2-hour dwell-time as prescribed in the protocol. In this study, completion rates, side effects, and non-recurrence rates were compared based on the dwell-time difference.

Materials and Methods: From November 2006 to April 2016, a total of 142 patients were enrolled to receive 80 mg BCG (n=76; 1A group) or 40 mg BCG (n=66; 1B group) for a 1-hour dwell time, and 31 patients were enrolled to receive 80 mg BCG (n=23; 2A group) or 40 mg BCG (n=8; 2B group) for the standard 2-hour dwell time. All 4 groups were evaluated.

UP.093, Figure 1. Survival Graphic of Bladder Cancer Patients Based on NLR



UP.093, Table 5. Multivariate Analysis Prognostic Factor that Affect Survival Rate in Bladder Cancer Patients

No	Variable	HR	CI 95%	p
1	Age (years)			
	<60	0,993	0,712-1,386	0,968
	>60	2,032	0,832-3,213	0,329
2	Sex :			
	Male	1,303	0,845-2,01	0,232
	Female	1,325	0,921-2,34	0,132
3	Initial haemoglobin level (mg/dL)			
	<10	1,088	0,75-1,52	0,654
	>10	0,982	0,53-1,32	0,521
4	Initial Creatinine level (mg/dL)			
	>1,5	1,851	1,31-2,60	0,000
	<1,5	1,129	0,921-1,34	0,000
5	NLR			
	>3	11,607	7,05-19,09	0,000
	<3	2,187	1,03-3,432	0,000
6	Stage			
	Locally	1,342	1,012-2,03	0,063
	Locally advanced	6,023	3,01-7,23	0,033
	Metastatic	8,103	6,45-10,45	0,021
7	Histological grading			
	PUNLMP	1,032	0,98-2,09	0,018
	Low grade	3,012	1,54-4,02	0,014
	High grade	5,125	4,22-6,12	0,004

Results: The completion rates for each group were as follows: 67/76 (88.2%), 54/66 (81.8%), 21/23 (91.3%), and 7/8(87.5%) for the 1A, 1B, 2A, and 2B groups, respectively. There was no significant difference with regard to dwell time between the 4 groups. A total of 24 patients could not complete the scheduled course. Of these cases, bladder irritation symptoms were seen in 5/24 (20.8%), general malaise in 4/24 (16.7%), discontinuations due to Reiter's syndrome in 2/24 (8.3%), and 21/24 (87.5%) were 1-hour dwell-time cases. The non-recurrence rates were as follows: 52/76 (68.4%), 46/66 (69.7%), 19/23 (82.6%), and 7/8 (87.5%) for the 1A, 1B, 2A, and 2B groups, respectively. Both 1-hour dwell time cases were lower than the 2-hour cases.

Conclusions: There are some reports that shortening the dwell time can reduce the side-effects caused by BCG. However, in this study, no improvement in the completion rate or reduction in side-effects was observed. The non-recurrence rate was lower in the 1-hour dwell time groups compared with the standard 2-hour dwell time groups.

UP.098

Prior Tuberculosis Infection Does Not Affect the Efficacy or Major Adverse Effects of Intravesical Bacillus Calmette-Guerin Treatment for Urothelial Carcinoma of the Urinary Bladder: A Nationwide Population-Based Study

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Introduction and Objective: Prior tuberculosis infection (PTBI) is a relative contraindication for intravesical Bacillus Calmette-Guerin (BCG) therapy because it may increase the risk of complications or decrease the treatment effectiveness, which hasn't been supported by any clinical data. We surveyed its the efficacy and adverse effects (AE) in patients with PTBI by analyzing data from National Health Insurance Research Database in Taiwan.

Materials and Methods: From 2000 to 2009, patients with newly-diagnosed bladder cancer treated with transurethral resection of the bladder tumor (TURBT) and BCG within 3 months were included. Those developed upper urinary tract cancer during the studying period were excluded. Disease recurrence, progression, and major adverse effects were compared between those with PTBI and those without till December 31st 2011. Disease recurrence was defined as repeated TURBT after >2 BCG therapy. Patients receiving cystectomy or radiotherapy for bladder cancer after >2 BCG therapy were viewed as disease progression. Patients receiving intensive care for urinary tract infection were defined as major AE. The times of instillation within 3 months after initiation of the 1st BCG therapy were also recruited for

UP.094, Table 1- Complications During 3 Years of Follow Up (M- male, F- female)

		6 months	1year	2 year	3 years
Day continence (%)	M	74	89	92	90
	F	69	87	90	91
Night continence (%)	M	65	84	87	88
	F	61	85	88	90
Neobladder capacity (ml)		298 (219-398)	420 (280-589)	466 (301-589)	491 (311-659)
Post-void residual volume (ml)		11 (0-22)	24 (0-47)	29 (0-51)	46 (0-99)
24 hours voiding frequency		9	7	6	5
Acidosis (%)		0	2	5	8
Vitamin B12 deficiency (%)		0	0	0	2
Pouch calculosis (%)		0	2	4	6
Hydronephrosis (%)					
bilateral		9	4/grI/	4 /grI/	5/1-gr I;2-grII, 2- gr III/
onesided		0	2 /gr II/	/4, 2- gr- II;2-gr-III/	6 /1- gr I;2-gr II, 3-gr III-IV- twice Re-poucho-anastomosis /

analysis. Fisher exact test and Wilcoxon rank sum test were used for statistic analysis.

Results: Three thousand nine hundred and fifteen patients were included for analysis. One hundred eighty seven (4.8%) had PTBI, and they were prone to be male (p=0.025) and older (p<0.001). There were no statistical differences when it comes to disease recurrence (p=0.643), progression (p=0.811), or major AE (p>0.999). As for keeping up with the instillation schedule, patients with PTBI had fewer times of instillation within 3 months (p=0.017), but it became insignificant after adjustment for sex and age with Poisson regression test (β=0.113, p=0.290).

Conclusions: PTBI does not affect the treatment efficacy or major AE of BCG treatment for superficial bladder cancer. The instillation schedule had no significant difference either.

UP.099

Clinical Outcomes of Low-Dose and Reduced Dwell-Time Bacillus Calmette-Guerin Induction Therapy in Non-Muscle Invasive Bladder Cancer

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Introduction and Objective: Low-dose BCG and reduced dwell times are being examined to reduce adverse events associated with BCG therapy. We investigated whether intravesical induction therapy using BCG 40 mg and a 1-h dwell time, as performed at our hospital, is clinically useful.

Materials and Methods: This study included 103 patients who underwent intravesical BCG induction therapy for non-muscle invasive bladder cancer at our hospital between April 2013 and December 2016. Patients were divided into a standard dose (80 mg) and low dose (40 mg) BCG group; and patient characteristics, efficacy, and adverse events were retrospectively compared.

Results: The BCG dose was 40 mg in 77 patients and 80 mg in 20 patients. Mean age was significantly older in the 40-mg group (75 years) than in the 80-mg group (69 years, p=0.029), but no other significant differences in patient characteristics or pathological factors were evident between groups. The BCG Tokyo strain was used in all patients, and the BCG dwell time was 1 h. Prophylactic antibiotics were concomitantly used in 86.6% of all patients. The overall frequency of adverse reactions was 66.2% in the 40-mg group and 80.0% in the 80-mg group, but this difference was not significant (p=0.23). Treatment completion rates were comparable, at 93.5% in the 40-mg group and 95.0% in the 80-mg group. Response rates in CIS patients were comparable at 76.9% (20/26) and 77.8% (7/9), respectively. During the median observation period of 2.3 years; the 2-year non-recurrence and non-progression rates were 70.7% and 95.8%, respectively, in the 40-mg group, and 57.6% and 100%, respectively, in the 80-mg group. These differences were not significant (p=0.30, p=0.38).

Conclusion: This study found no significant differences in adverse reactions or treatment outcomes with BCG induction therapy between the 40- and 80-mg groups. These findings suggest that use of concomitant antibiotics and reduced dwell times do not affect the clinical efficacy or safety of BCG induction therapy.

UP.100

Second Transurethral Resection for T1 Bladder Cancer: Is It Necessary?

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Introduction and Objective: Second transurethral resection of bladder tumor (TURB) for non-muscle invasive bladder cancer (NMIBC) is recommended for accurate staging, especially upgrading to T2, and possible reduction of recurrence. Although the previous studies demonstrated that 4-25% of the patients with NMIBC were upstaged to muscle invasive cancer by second TURB, we rarely experience upstaging by second TURB. Then, we evaluated the clinical significance of second TURB for T1 bladder cancer.

Materials and Methods: Since December 2008, we performed second TURB in all patients who had T1 urothelial bladder cancer diagnosed by first TURB and consented to second TURB. Second TURB was performed around 4 to 8 weeks after first TURB and the base and adjacent area of the primary tumor and new lesions, if detected, were resected. We investigated the frequency of upstaging to >T1 and recurrence rate in patients who underwent second TURB between December 2008 and August 2016. Recurrence and progression rates after second TURB were compared with those in patients who underwent only first TURB between January 2001 and November 2008.

Results: A hundred patients received second TURB during the study period. 29 and 71 had grade2 and grade 3 urothelial cancers, respectively. Adjuvant BCG therapy after second TURB was performed in 88 (88%) and the median follow-up period was 27 months. The residual tumors were detected in 60 patients (60%) on second TURB. The sites of the residual tumors were the base, adjacent area of the primary tumor, and both of them in 19 (32%), 41 (68%), and 18 (30%) patients, respectively. The pathological stages determined by second TURB were pT0, pTis/a, pT1, pT2 in 40, 35, 22 and 3 patients, respectively. In 3 patients with upstaging to pT2, first TURB specimens did not contain enough muscle layers for pathological examination. Recurrence- and progression-free survivals were not improved by second TURB when compared with these in patients without second TURB. Multivariate analysis revealed that only BCG therapy was the independent predicting factor for recurrence (HR: 0.05; 95% CI=0.01-0.25; P<0.001).

Conclusions: Second TURB for T1 bladder cancer can be spared when first TURB resected all visible tumors and enough muscle layers for pathological evaluation.

UP.101

Non-Muscle Invasive Bladder Carcinoma: New Prognostic Factors Based on Real-World Clinical Practice

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Introduction and Objective: To establish some new prognostic factors for recurrence and progression of none muscle invasive bladder carcinoma (NMIBC) managed conservatively in real-world clinical practice.

Materials and Methods: A total of 115 patients with non muscle invasive bladder carcinoma managed between January 2010 and October 2016 were included in the present single center study. The following

UP.095, Table 1.

	UCC only	n	%
Total		232	
Gender			
Male		184	79.3%
Female		48	20.7%
Age			
Mean (±st dev)	67.4 (8.5)		
Time from TUR to RC			
Median (IQR)	4.0 (2.9-6.6)		
<3 months		49	21.1%
<6 months		127	54.7%
Neoadjuvant chemo			
Yes		40	17.2%
No		192	82.8%
Upper tracts			
Normal		184	79.3%
Unilateral hydronephrosis		11	4.7%
Bilateral hydronephrosis		2	0.9%
Nephrectomy/Anephric		0	0.0%
Unknown		35	15.1%
Renal function			
eGFR <60mls/min		32	13.8%
eGFR >60mls/min		135	58.2%
Unknown		65	28.0%
Status			
Follow up (median, IQR)	40.2 (20.5-68.1)		
Alive		194	83.6%
Dead			
All causes		38	16.4%
30 days		1	0.4%
90 days		2	0.9%
UCC		11	4.7%

UP.095, Table 2.

	T0	n	%
TUR T-Stage	cTa	39	16.8%
	cTis	10	4.3%
	cT1	99	42.7%
	cT2	83	35.8%
	cT3	1	0.4%
	cT4	0	0.0%
TUR Tis present	No	135	58.2%
	Yes	71	30.6%
	Unknown	26	11.2%
RC Nodes	Pos	3	1.3%
	Neg	229	98.7%
RC M-stage	Pos	0	0.0%
	Neg	232	100.0%
RC Margin	Pos	2	0.9%
	Neg	230	99.1%

UP.095, Table 3.

			Neoadjuvant				
Year	cT2		Yes		No		
	n	%	n	%	n	%	p-value
All	83		35	42.2%	48	57.80%	
Alive	70	84.3%	35	50.0%	35	50.0%	<0.001
All Death	13	15.7%	0	0.0%	13	100%	
UCC death	2	2.4%	0	0.0%	2	100%	

prognostic factors were studied for each patient: sex, lack of health coverage, economic incomes, rural origin, shortage of BCG therapy products when needed, persistent exposure to carcinogen, tumor size> 3cm, tumor multifocality, tumor stage, tumor grade, and hydronephrosis. Statistical analysis was performed by Kaplan-Meier method.

Results: The mean age of our patients was 60 years, with a male predominance (88.7%). All our patients had complete transurethral resection in one or two sessions. However, BCG therapy was administered to 80 patients (69. 56%). Though, long BCG therapy protocol (more than one year period) was achieved in 56 patients (48. 69%). No patient had Mytomycine C during our study period. After a mean follow-up of 28 months, tumor recurrence was reported in 34 patients (29.5%) and tumor progression in 18 cases (15.6%). Nevertheless, 63 patients (55%) were recurrence free. NMIBC recurrence and progression prognostic factors statistic results are resumed in table 1.

Conclusions: To our knowledge, this is the first study that came up with some new prognostic factors directly linked to the recurrence and progression of NMIBC in our real world practice. The shortage of BCG therapy products was reported as a significant new prognostic factor for both NMIBC recurrence and progression. However, our study had proved the lack of health coverage, the low economic incomes, and the rural origin as new and statistically significant prognostic factors for only NMIBC recurrence in our area. Further prospective studies including larger cohort of patients are needed in order to confirm our new NMIBC recurrence and progression prognostic factors and especially related to the impact BCG therapy products shortage.

UP.102

Interferon Alfa2b Induction Usefulness in Non-Muscle-Invasive Bladder Cancer Compared to BCG

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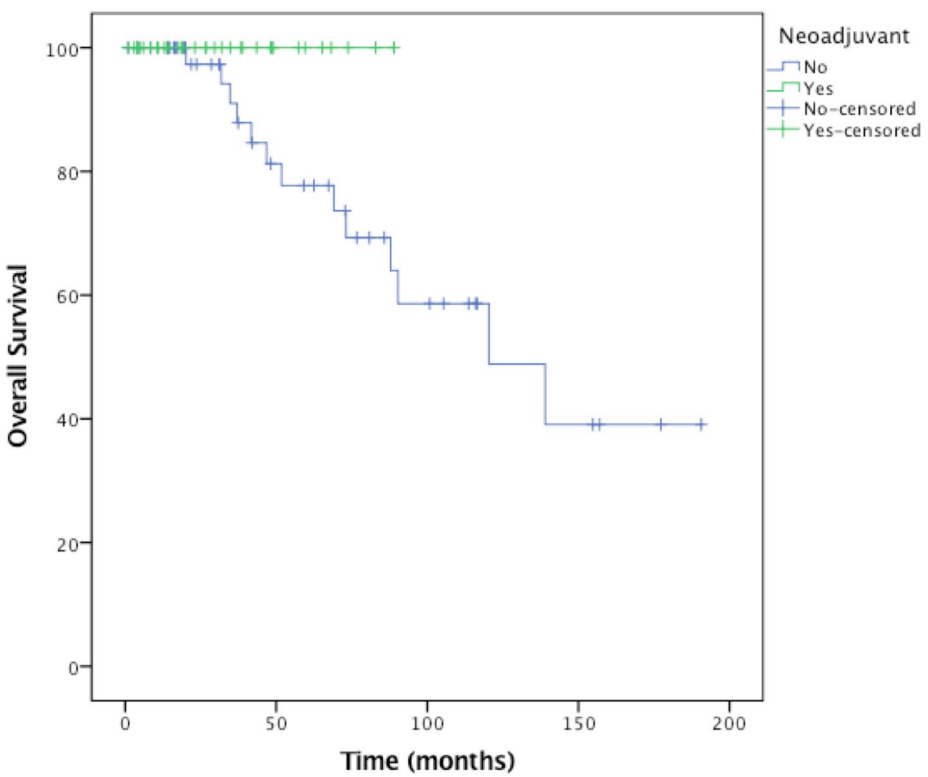
Introduction and Objectives: The induction with BCG in patients with non-muscle-invasive bladder cancer reduces the risk of relapse and progression, however, it is associated with morbidity due to the adverse effects that it entails. Induction with interferon alfa2b (INF) may be an effective alternative in patients with significant morbidity and in situations where BCG is not available.

Materials and Methods: A Retrospective analysis was performed on 211 patients, undergoing induction

UP.095, Table 4.

				Univariate 95% CI				Multivariate 95% CI			
	T0	**n**	**%**	**HR**	**Lower**	**Upper**	**p-value**	**HR**	**Lower**	**Upper**	**p-value**
Total	206										
Gender											
	Male	163	79.1%	1.03	0.45	2.36	0.94	1.175	0.48	2.86	0.72
	Female	43	20.9%								
Age											
	Mean (±st dev)	67.4 (8.5)		1.05	1.01	1.1	0.016	1.06	1.01	1.11	0.012
TUR stage	a	37	18.0%								
	is	10	4.9%								
	1	92	44.7%								
	2	67	32.5%	1.75	0.5	6.16	0.38	4.09	1.05	15.95	0.043
TUR Cis	Yes	71	34.5%	1.75	0.91	3.34	0.09	2.14	1.03	4.49	0.043
	No	135	65.5%								
RC Nodes	Positive	2	1.0%	0	0		0.99	3.54	0	0	0.99
	Negative	204	99.0%								
RC Metastasis	Positive	0	0.0%								
	Negative	206	100.0%								
RC Margins	Positive	2	1.0%	0.89	0.12	6.71	0.91	1.34	0.17	10.71	0.78
	Negative	204	99.0%								
Neoadjuvant chemo											
	Yes	29	14.1%								
	No	177	85.9%	24.54	0.16	3881.9	0.22	273873.3	0	8.10E+221	0.96

UP.095, Figure 1.



with BCG or INF from November 2011 to September 2016, comparing the risk of early relapse (3 months) and overall recurrence. The assessment of adverse effects in each treatment group was also evaluated.

Results: There was a statistically significant reduction in early recurrence in the INF group (17.5%) vs the BCG group (82.5%) (p <0.00001). However, we found no statistically significant differences in terms of overall relapse. In the INF group, there were fewer adverse effects (10.53%) vs BCG (22.96%), without achieving statistically significant differences.

Conclusion: Instillations with INF have shown a decreased risk of early relapse in patients with non-muscle-invasive bladder urothelial cancer. INF has a global relapse rate similar to BCG. INF is a well tolerated treatment, with a low rate of adverse reactions and we can consider it a safe and effective therapeutic alternative in cases of BCG shortage or intolerance.

UP.103

Adherence and Tolerability of Intravesical Immunotherapy with Bacille Calmette-Guérin in Non-Muscle Invasive Bladder Cancer: A Retrospective Analysis of the Last 5 Years in a Tertiary Center

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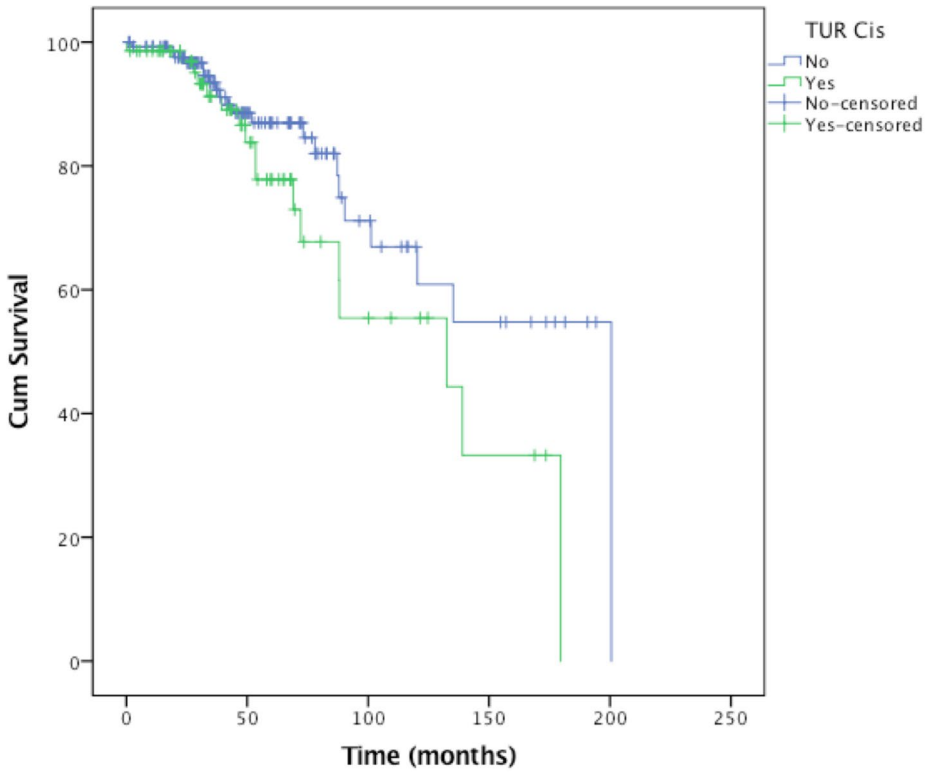
UP.095, Figure 2.



Introduction and Objective: Intravesical immunotherapy with Bacille Calmette-Guérin (BCG) is considered the gold-standard adjuvant treatment to prevent recurrence and progression in intermediate and high risk urothelial non-muscle invasive bladder cancer (NMIBC). However, intravesical BCG is often poorly tolerated, leading to early treatment interruption in many patients. To obviate this, several schedules for BCG instillations have been proposed, with most differences occurring in the maintenance phase of the protocols. We evaluated the adherence and tolerability of patients with NMIBC submitted to a monthly instillation maintenance schedule of adjuvant intravesical immunotherapy in a tertiary center.

Materials and Methods: Retrospective analysis of patients with NMIBC treated with monthly instillations of intravesical immunotherapy with BCG for three years in a tertiary center from 2010 until 2015.

Results: A total of 187 patients were evaluable, with 34 patients already under treatment. The probability of been on treatment at the end of the first year was 57% and the probability of complete the treatment was 18%. During the first year of treatment, 23 (15%) patients interrupted instillations due to side effects, while 39 (25%) patients abandoned treatment due to other non-specified reasons.Considering the extended 3 years length of treatment, 24% (n=36) of patients quitted instillations due to side effects, while almost 38% (n=58) of patients abandoned treatment due to unclarified motifs.Cystitis-like syndrome constituted the most frequent cause of cessation (n=36, 28%). In 8 (6%) patients, systemic symptoms led to treatment cessation. Among the 3 year length of treatment, 5 out of 187 (3%) patients stopped treatment due to recurrence, and 2 (1%) patients due to progression to muscle invasive disease.

Conclusions: This study reveals that the adherence of patients to a long-term (3 years) monthly scheme of intravesical BCG instillations is low (18%), mostly due to adverse effects and non-clarified reasons, favoring short duration schemes (1 year) in detrimental to long term protocols (3 years).

UP.104

Weka Decision Trees in Predicting Recurrence and Progression of Non-Muscle-Invasive Bladder Cancer Treated by Endoscopic Resection and Maintenance Bacillus Calmette-Guérin: Multicentric Analysis of 728 Patients

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Introduction and Objective: Identify new anatomo-clinical parameters associated with recurrence / progression of non-muscle-invasive bladder cancer (NMIBC) and distinguish between parameters associated with early and late recurrences by comparing classical statistical methods and decision tree constructions and associative rule constructs generated by Weka.

Materials and Methods: Data were retrospectively analyzed data of 728 patients (from three different department of urology in the north of Tunisia) who had primary NMIBC between the years 2000 and 2011. They were treated by transurethral resection of bladder tumor (TUR-BT) with 6 months maintenance bacillus Calmette-Guérin (BCG). Patients were followed for a minimum duration of 60 months or until progression to muscle infiltration. Clinical parameters were: age, gender, smoking, occupational exposure to carcinogens, symptom delays prior to first consultation, obstruction of the bladder, and possible perforation of the bladder during endoscopic resection. Tumor-related parameters were: number of tumors, tumor site, tumor appearance, tumor size, tumor base aspect, stage, grade and presence of CIS. Patients were staged according to the 2002 Tumor Node Metastasis (TNM) classification and the 1973 World Health Organization grading system. Recurrence was defined as non-muscle-invasive or muscle-invasive and progression as muscle-invasive tumor determined based on following cystoscopy and TUR-BT results, and confirmed by histopathologic analysis. Time to first recurrence and progression was determined for each risk group.

Results: The mean age was 64.29 ±11.9 years with a sex-ratio of 1/12. The overall mean follow-up period was 54.4 months of all patients. Of 728 patients, 152 (20.9%) and 216 patients (29.7%) had recurrence after treatment at the 1 and 5 year follow-up period, respectively. While 62 (8.5%) patients progressed to muscle-invasive cancer at the 5 year follow-up period. In the multivariate analysis, number (p=0,01), tumor size (p=0,02), tumor appearance (p=0.02), smoking (p=0.043), grade (p=0.03) and presence of high grade high stage carcinoma (p=0,02) were found to be statistically significant for disease recurrence. By comparing the results of Weka by elaborating the decision trees and those by the classical statistical tests we note that there is agreement: the number of tumors, the tumor size, T1G3 and smoking are risk factors of recurrence by both methods, however other factors are retained by weka and do not appear to be statistically significant by the classical approach: gender, the tumor site, Stage, high grade, history of tuberculosis and concomitant CIS (table I). Moreover, risk factor of tale and early recurrence are not the same according to Weka method and classical statistical tests.

Conclusion: This method allows urologist to predict recurrence and progression, to discuss with the patient the different therapeutic options (based on reliable evolutionary data) and to make an individual choice of the most appropriate treatment and follow-up protocol.

UP.105

En-Bloc Resection for Primary Non-Muscle Invasive Bladder Cancer: Our Initial Experience

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Introduction and Objectives: High quality transurethral resections of bladder tumours (TURB) are crucial for bladder cancer diagnosis and treatment. Conventional TURB (cTURB) goes against the basic principle of oncologic surgery. Tumours should be resected as a whole to reduce tumour spill. Additionally tumour fragmentation leads to loss of orientation

UP.098, Table 1. Demographics of Patients with and without Prior Tuberculosis Infection Received Adjuvant Intravesical BCG Therapy

Prior tuberculosis infection	Yes		No		P value
Numbers	187	(4.8%)	3728	(95.2%)	
Sex					0.025
Female	30	(16.0%)	860	(23.1%)	
Male	157	(84.0%)	2868	(76.9%)	
Age					<0.001
<50 years	7	(3.7%)	371	(10.0%)	
50 – 64 years	32	(17.1%)	1141	(30.6%)	
65 – 74 years	62	(33.2%)	1133	(30.4%)	
≧75 years	86	(46.0%)	1083	(29.0%)	
Disease recurrence	36	(19.3%)	770	(20.7%)	0.643
Times of instillation before disease recurrence	6	(3 – 9)	6	(3 – 48)	0.231
Disease progression (cystectomy + radiotherapy)	19	(10.2%)	413	(11.1%)	0.811
Partial or radical cystectomy	2	(1.1%)	75	(2.0%)	0.586
Times of instillation before cystectomy	9	(6 – 12)	6	(3 – 21)	0.457
Radiotherapy	17	(9.1%)	338	(9.1%)	0.991
Times of instillation before radiotherapy	6	(3 – 18)	6	(3 – 58)	0.711
Severe urinary tract infection	0	(0.0%)	4	(0.1%)	>0.999
Total times of instillation within 3 months	6	(1 – 8)	6	(1 – 9)	0.017*

UP.101, Table 1. NMIBC Recurrence and Progression Prognostic Factors

Prognostic factors	Recurrence	Progression
Sex	Significant *(p=0.003)*	Not significant *(p=0.7)*
Lack of health coverage	Significant *(p=0.003)*	Not significant *(p=0.8)*
Low economic incomes	Significant *(p=0.001)*	Not significant *(p=0.06)*
Rural origin	Significant *(p=0.005)*	Not significant *(p=0.9)*
Shortage of BCG therapy product	Significant *(p=0.004)*	Significant *(p=0.005)*
Persistent exposure to carcinogen	Significant *(p=0.001)*	Significant *(p=0.003)*
Tumor size> 3cm	Significant *(p=0.001)*	Significant *(p=0.002)*
Tumor Multifocality	Significant *(p=0.001)*	Significant *(p=0.005)*
Tumor stage	Not significant *(p=0.12)*	Significant *(p=0.05)*
Tumor grade	Significant *(p=0.003)*	Significant *(0.005)*
Hydronephrosis	Not significant *(p=0.07)*	Not significant *(p=0.09)*

and impedes optimal staging of bladder tumours. This has led to the introduction of the en-bloc resection technique. In this study we present our initial experience and results of en-bloc resection for treatment of non-muscle invasive bladder cancer.

Materials and Methods: During en-bloc resection the bladder mucosa is incised using bipolar electrocautery. The tumour is then undermined and evacuated from the bladder in one piece. In this study, 14 patients who underwent an en-bloc resection were matched to patients that were treated with cTURB in the same time period, based on focality, tumour size and adjuvant instillations. Outcomes of interest were presence of detrusor muscle in resected specimen, intra- and postoperative complications, and the presence of residual/recurrent tumours at first cystoscopic evaluation 3 months following tumour resection.

Results: Tumour stage and grade are summarized in table 1. In 5 out of 28 patients, a tumour was present at cystoscopy 3 months following TURB (cTURB=2, en-bloc=3). Detrusor muscle was present in all en-bloc resected patients, and in 7 (50%) cTURB patients. In both groups no intraoperative complications occurred. Two postoperative complications occurred in the cTURB group, and 1 postoperative complication occurred in the en-bloc group (table 1).

Conclusion: Based on our initial experience, en-bloc resection seems a safe technique to treat patients with NMIBC. The number of tumours present 3 months after tumour resection was similar for both resection techniques. En-bloc resection could possibly improve staging of bladder tumours due to the presence of detrusor muscle and preservation of orientation.

UP.106

Oncologic Results of Simultaneous Bladder Tumor and Prostate Endoscopic Resection

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Introduction and Objectives: Bladder cancer is the second most frequent genito-urinary cancer after prostate cancer in the world, and is the primary urinary cancer in Tunisia. In the other hand, benign prostatic hyperplasia (BPH) is the most frequent affection of the elderly men and represents the most frequent cause of bladder obstruction. BPH, through its obstructive mechanism, can be a risk factor of bladder cancer. Their simultaneaous resection was considered but it has been a subject of controversies for a long-time. It was suspected to enhance the risk of tumor implantation in the prostatic fossa and then the recurrence risk in this site. Many recent studies have shown that simultaneous resection does not major the risk of recurrence in the prostatic urethra. The aim of this study was to evaluate the oncologic prognosis of this procedure compared to single trans-urethral bladder resection.

Materials and Methods: This was a retrospective study, concerning 130 patients, treated over a period of 13 years in the department of Urology in La Rabta University Hospital. Group I involving 66 patients that had simultaneous resection of NMIBC and BPH. Whereas, Group II involves 64 patients that had single resection of none muscle invasive bladder tumour (NMIBT). Clinical, histological and oncological variables were compared between both groups.

Results: Mean patients age was 72.4 +- 6.9 years in groups I and 63.5 +- 10.2 years in Group II (p < 0.001). Smoking was the most frequent risk factor. Non-recurrent bladder tumors were noted in 58 patients (87.9%) in Group I and in 56 patients (87.5%) in Group II. NMIBT was solitary in 38 cases (57.6%) in Group I ans in 26 cases (40.6%) in Group II. Mean follow-up period was comparable in both groups (3.4 +- 2.5 years vs 3.5 +- 2.1 years). Intra-vesical BCG treatment was completed for 26 patients in Group I (39.4%) and for 40 patients in Group II (62.5%) (p=0.008). Tumor recurrence rate was significantly lower in group I (Group I: 36.4%; Group II : 54.7% ; p =0.046). There was no difference in average time to recurrence (Group I: 16.6 +- 22.4 months; Group II: 18.3 +- 20.6 months; p= 0.76). Recurrence in the UP was comparable in both groups (Group I: 4.5%; Group II: 4.7%; adjusted p =0.33). Progression rate was also comparable in the two groups (p = 0.33). Mean survival time without recurrence was comparable (Group I : 16.6 months ; Group II : 18.3 months ; p=0.71) as well as the mean survival time without progression (Group I : 20 months ; Group II : 25.1 months ; p=0.46).

Conclusion: Simultaneous resection of NMIBC and BPH could be safely performed, without any increased risk of tumor recurrence, or progression particularly in the prostatic urethra.

UP.104, Table 1. Weka Decision Trees versus Classical Statistical Tests in Predicting Recurrence of NMIBC Treated by Endoscopic Resection and Maintenance BCG

Parameter	Classical statistical test X2		Decision trees by Weka	
	Early recurrence	Late recurrence	Early recurrence	Late recurrence
Gender				X
Smoking		X (p=0,04)	X	X
Tuberculosis history				X
Tumor number	X (p=0,01)		X	
Tumeur size	X (p=0,02)		X	
Tumor site			X	
Tumor appearance	X (p=0,02)		X	
Stade			X	
Grade	X (p=0,03)		X	
T1G3	X (p=0,02)		X	
Cis				X
High grade				X

UP.105, Table 1. A) Patient and Tumour Characteristics of Patients Treated with cTURB and En-bloc Resection; B) Outcomes for Patients Treated with cTURB and En-bloc Resection

A. Patient and tumour characteristics	cTURB	En-bloc resection	p
Sex			
Male_	8 (57%)	11 (79%)	0.42
Female_	6 (43%)	3 (21%)	
Age, med [iqr]	71 [63-76]	68 [60-76]	0.52
History of bladder cancer	7 (50%)	7 (50%)	1.00
Focality			
Unifocal_	8 (57%)	8 (57%)	¤
Multifocal_	6 (43%)	6 (43%)	
Tumour size			
< 3cm_	12 (86%)	12 (86%)	¤
>3cm_	2 (14%)	2 (14%)	
Adjuvant treatment	4 (29%)	4 (29%)	¤
B. Outcomes	**cTURB**	**En-bloc resection**	**p**
Tumour stage			
CIS only_	1 (8%)*	0	NA
Ta_	12 (92%)*	13 (93%)	
T1_	0	1 (7%)	
Tumour grade (WHO 1973)			
CIS only_	1 (7%)	0	NA
G1_	3 (21%)	2 (7%)	
G2_	9 (65%)	11 (79%)	
G3_	1 (7%)	1 (7%)	
Presence detrusor in specimen	7 (50%)	14 (100%)	<0.05
Intra-operative complications	0	0	1.00
Post-operative complications	2 (14%)	1 (7%)	1.00

c TURB = conventional transurethral resection of bladder tumours, CIS = Carcinoma in Situ, NA = Not Available, not enough cases to perform a difference test

¤ characteristics for which patients were matched

* 1 patient stage could not be determined

UP.107

The Global BCG Shortage on Treatment Patterns in Australia: Population-Based Data

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Introduction and Objective: Intravesical Bacillus Calmette-Guérin (BCG) is a prevelent treatment adjunct for non-muscle invasive bladder cancer (NMIBC) since the late 1970's. Recently there has been an international shortage of BCG therapy which has affected clinical practice patterns in globally. Given this shortage, we are aimed to review the national trends of BCG therapy in Australia over the past 10 years.

Materials and Methods: Between April 2006 and April 2016, monthly data regarding BCG prescriptions were extracted from the Pharmaceutical Benefits Australia website. The following codes were utilised: Pharmaceutical Benefit Schedule (PBS) codes 1140B (CIS of urinary bladder), 5901N (CIS of urinary bladder), 1131M (Primary urothelial carcinoma of the bladder) and 5902P (Relapsing superficial urothelial carcinoma of the bladder).

Results: Two independant breakpoints in the number of prescriptions were identified: a sudden, global drop in October/November 2014 and a precipitous fall for the CIS indication in June/July 2012. Thus we defined three intervals within the study period: a) April 2006 to June 2012, b) July 2012 to October 2014 and c) November 2014 to March 2016. After restoration of supply, BCG prescriptions for primary and relapsing TCC rebounded to a higher level with a faster rate of growth than prior to the first shock while for CIS the number of prescriptions have not rebounded and are currently close to zero.

Conclusions: The global shortage of BCG intuitively resulted in a reduction of BCG prescriptions from October 2014. Following resumption, BCG was prescribed for primary and relapsing TCC in a higher volume than a manner prescribed prior to the global shortage and is growing faster. While BCG prescriptions for CIS remain low, the precise cause of this is unclear from the current data.

UP.108

Predictive Factors of Recurrence and Progression in Patients with Non-Muscle-Invasive Bladder Cancer Treated with BCG

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Introduction and Objective: The treatment for non-muscle-invasive bladder cancer (NMIBC) of high and intermediate risk is intravesical immunotherapy with Bacillus Calmette-Guérin (BCG) after a complete transurethral ressection of the bladder tumor (TUR-B). Our objective was to analyse the out-

comes of patients treated with adjuvant BCG, and to identify predictors of disease recurrence and progression in these population.

Materials and Methods: Retrospective analysis of the patients with NMIBC treated in our institution, between 2010 and 2015, with intravesical BCG instillations after a complete TUR-B. We excluded patients who completed less than 6 instillations and those in whom a complete TUR-B hadn't been performed before. Patients' demographic data, tumor characteristics and the number of BCG instillations were reviewed. We then calculated Club Urológico Español de Tratamiento Oncológico (CUETO) scores for risk stratification and analysed the correlation of these variables with tumour recurrence and progression.

Results: One hundred and twenty four patients were included (78.2% male gender, mean age 71.1 ± 9.1 years). After a median follow-up of 39.7± 20.5 months, 37 patients recurred (29%) with a mean time to first recurrence of 14.2 months, 15 progressed (12%), the overall survival (OS) was 87.1% and the disease-specific survival (DSS) was 93.5%. A 6-weekly induction scheme was used in 27.4% of patients, with the remaining receiving more than 6 instillations. A statistically significant correlation was found between CUETO risk score and progression (r=0.17, p=0.04). Patients' and tumour characteristics, individually, were not statistically correlated with none of the outcomes.

Conclusion: In our sample we confirmed the usefulness of CUETO risk score calculation in the approach of patients with NMIBC treated with BCG, due to its correlation with disease progression. This evaluation might guide an individualized follow-up schedule of these patients based on the risk score, and it allows the identification of high risk patients in whom an early cistectomy should be weighted. The retrospective nature of this analysis, the reduced number of patients and the heterogeneity of the BCG scheme used are handicaps to consider in this study.

UP.109

The Expression of ARID1B Is Prognostic and Predictive for Postoperative Adjuvant Chemotherapy Benefit in Patients with Muscle-Invasive Bladder Cancer Treated by Radical Cystectomy

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Introduction and Objective: ARID1B, which exists as mutually exclusive isoforms with ARID1A in SWI/SNF chromatin remodeling complex, has been recently identified as a major mutant gene in a wide variety of cancers. The present study aimed to determine the association between ARID1B expression with patients' outcome as well as the benefit from adjuvant chemotherapy in patients with bladder urothelial carcinoma.

Materials and Methods: We recruited 143 patients consecutively with bladder cancer treated by radical cystectomy in Fudan University Shanghai Cancer Center. TMAs were created in triplicated from formalin-fixed, paraffin embedded specimens. Immunohistochemistry was performed to assess the expression of ARID1B and their associations with outcomes as well as clinicopathological factors were evaluated.

Results: ARID1B expression was significantly associated with tumor size (P=0.015), T stage (P=0.027), OS (P<0.001) and PFS (P=0.043). Furthermore, high expression of ARID1B was an independent indicator of poor OS (P=0.012) in patients with bladder urothelial carcinoma. The prognostic model containing ARID1B showed a better predictive accuracy than the bench models. Most importantly, the benefit of adjuvant chemotherapy observed in patients with low ARID1B expression was superior to that observed in patients with high ARID1B expression.

Conclusion: Our study suggested that ARID1B might serve as a prognostic biomarker of bladder urothelial carcinoma, and might as a predictive marker for the patients' selection of adjuvant chemotherapy in high risk subgroup patients.

UP.110

Clinical Significance of Gamma-Klotho in Urothelial Carcinoma of the Bladder

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Introduction and Objective: Non-muscle invasive bladder cancer (NMIBC) accounts for about 70% of all bladder cancers. Approximately 20% to 40% of urothelial carcinoma of the bladders present with or develop muscle invasive bladder cancer (MIBC). Gamma-Klotho (KLg) is a member of Klotho family which originally identified as an anti-aging gene. Alpha-Klotho and beta-Klotho has recently been reported to correlate with cancer prognosis in some malignancies. In contrast, the association between KLg and cancer prognosis remains unclear. In the present study, we evaluated the association between KLg and urothelial carcinoma of the bladder.

Materials and Methods: We extracted tissue samples from 151 NMIBC and 54 MIBC patients undergoing TURBT in our institution. The expression level of KLg was examined with immunohistochemical staining (IHC) using paraffin-embedded tissues. Patients were divided into two groups according to KLg expression levels calculating from population and intensity. We investigated the association between patient's clinicopathological variables and their KLg expression. Next, we investigated the effect on bladder cancer of exogenous KLg *in vitro* assay using human bladder cancer cell lines (MGHU3, J82, UM-UC-3). In addition, we evaluated the roles of KLg using a human bladder cancer xenograft model.

Results: Patients with high expression level of KLg were significantly high risk of mortality compared to patients with low expression level of KLg (P<0.05). An elevated level of KLg correlated with a higher incidence of lymphovascular invasion (P<0.05). In vitro assays using human bladder cancer cell lines revealed that treatment with exogenous KLg protein increased the proliferation, migration ability invasion ability, and anchorage-independent growth potential of the bladder cancer cells. In addition, experiment of xenograft model showed tumor growth rate during the monitoring and tumor weight at sacrifice were significantly lower in mice treated with KLg siRNA compared to that of the controls

Conclusion: Our results suggested that KLg plays important roles in tumor invasion and progression in bladder cancer.

UP.111

Expression of MDM2 Mrna, MDM2, P53 and P16 Proteins in Urinary Bladder Cancer

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Introduction and Objective: Here we imposed a multimarker molecular panel composed of P53, MDM2 protein and mRNA & P16 with identification of sensitive and specific cut offs among the Egyptian urothelial carcinomas bilharzial or not emphasize the pathological and molecular classifications, pathways and prognosis as a privilege for adjuvant therapy.

Materials and Methods: Three hundred and ten urothelial lesions were pathologically evaluated and grouped as follows: 50 chronic cystitis as benign, 240 urothelial carcinomas and 20 normal bladder tissue as control. Immunohistochemistry for MDM Protein, P16 & p53 and In Situ Hybridization for MDM2mRNA were done.

Results: MDM2mRNA overexpression correlated with low grade low stage non invasive tumors, while P53>40% and p16<10% cut offs correlated with high grade high stage invasive carcinomas and bilharzial tumors (P=0.000).

Conclusion: MDM2mRNA overexpression vs P53>40% and P16<10% constitutes a multimarker molecular panel with significant cut offs, proved to distinguish low grade, low stage non invasive urothelial carcinomas (MDM2mRNA overexpression, P53<40%, P16>10%) from high grade, high stage invasive urothelial carcinomas (with p53>40, p16<10% and absent MDM2mRNA overexpression). Combined P53>40 and p16<10%, together with the histopathological features can distinguish in situ urothelial lesions from dysplastic and atypical lesions.

UP.112

Expression Epithelial Growth Factor Receptor (EGFR) & CD44 in Urinary Bladder Cancer

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Introduction and Objective: Identification of molecular factors as diagnostic and prognostic indicators as well as targets for better therapy is a high priority. Human epidermal receptors constitute a family of receptor tyrosine kinases, which appear to be implicated in cellular transformation and can be over-expressed in a variety of solid tumors. Also, there has been a progressive interest in the expression of CD44 as a marker of tumor aggressiveness and metastatic potential in some human cancers. Hypothesis: A variety of urinary bladder lesions and urothelial neoplasms are associated with alterations in Epithelial Growth Factor Receptor (EGFR) and CD44 gene and protein expression. Studying these factors by immunohistochemical methods and selectively by Fluorescent In-situ Hybridization (FISH) technique may give an idea about the influence of bilharziasis upon induction and progression of these lesions

Materials and Methods: Urinary bladder biopsies were subjected to histopathological examination, immunohistochemical detection of EGFR and CD44 and gene expression of EGFR using FISH technique.

Results: Malignant urothelial lesions, showed higher percentage of cellular positivity and scores for both markers compared to control and cystitis cases ($p<0.01$). Cases of bilharzial cystitis showed significantly higher percentage and higher scores of CD44 expression compared to non-bilharzial cystitis ($p<0.01$). Bilharzial Transitional Cell Carcinoma and Squamous Cell Carcinoma (TCC+SCC) cases showed significantly higher scores of both EGFR and CD44 expression, compared to non-Bilharzial (TCC+SCC) cases. EGFR protein and gene were upregulated in malignant urothelial lesions namely TCC and SCC, with significant correlation with grade of neoplasia. CD44 expression was also upregulated in urothelial bladder lesions especially SCC and was correlated positively with both the grade and stage of malignancy. All examined control, cystitis and adenocarcinoma cases showed negative results for EGFR gene activation by FISH technique. All cases of bilharzial TCC showed positive gene expression which is considered significant when compared with other non-bilharzial TCC ($p<0.01$). No significant difference in gene expression was detected between bilharzial and non-bilharzial cases of SCC ($p>0.05$).

Conclusions: In our study we found that grouping cases of (TCC+SCC), showed a significantly higher scores of both EGFR and CD44 expression in bilharzial patients compared to non-bilharzial patients, pointing to the possible role of bilharzial infection in progression of cancer. TCC subgroups -although were of small numbers- showed variable expression of EGFR and CD44, denoting possible different molecular background. FISH results confirmed EGFR upregulation in TCC and SCC but not in adenocarcinoma.

UP.113

Role of Slug, Snail, Twist and E-Cadherin in the Epithelial-Mesenchymal Transition in Bilharzial Associated and Non Associated Bladder Cancer

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Introduction and Objective: The epithelial-mesenchymal transition (EMT) is characterized by loss of cell-to-cell adhesion and cell polarity and is closely associated with the invasion and metastasis of several cancers. Given the multifocality and high rates of relapse, progression, and metastasis of bladder cancer (BC), the EMT is likely to participate in BC as well. Numerous factors associate with the EMT, and the key regulators of the EMT are E-cadherin, Twist, Snail, and Slug. In this study, we aimed to examine the expression of these transcription factors in human BC.

Materials and Methods: One hundred and fifty different urinary bladder lesions were studied, including 25 cystitis cases (15 bilharzial and 10 non bilharzial cystitis), 75 urothelial carcinoma cases (18 bilharzial associated and 57 non bilharzial associated) and 50 squamous cell carcinoma associated with bilharziasis, beside 5 control cases . Data concerning age, sex, tumor grade, stage, and associated bilharziasis were obtained. Each case was studied for Slug, Snail, Twist and E-cadherin expression by immunohistochemistry technique.

Results: All control and cystitis cases are negative for the Slug, Snail, Twist and E-cadherin expression 73.5% (50/68) , Twist; 65% (75/68) and Slug/snail, 40% (32/68) of associated bilharzial bladder carcinoma respectively while 70/1%(40/57), Twist; 61.2% (35/57) and Slug/snail, 52.5% (30/57) of non-associated bilharzial bladder respectively. Immunohistochemistry analysis showed that Twist was elevated with increasing tumor stage ($P<0.01$), the grade ($P < 0.01$). Slug/snail were elevated with increasing tumor stage ($P < 0.05$), the grade ($P < 0.005$).E-cadherin was reduced in expression corresponding with tumor grade ($P < 0.01$).

Conclusions: These data demonstrate that Twist, Snail and Slug and E cadherin may play a part in the progression of human bladder carcinoma.

UP.114

Development and External Validation of a Novel 12-Gene Signature on Muscle-Invasive Bladder Cancer for Prediction of Overall Survival: Linkage to Data from the Cancer Genome Atlas

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Introduction and Objective: We aimed to develop and validate a novel gene signature from published data and improve the prediction of survival in muscle-invasive bladder cancer (MIBC).

Materials and Methods: We search the published gene signatures of MIBC on overall survival (OS) and compiled all the 237 genes to develop a novel gene signature. Statistics were conducted with R (version 3.2.1, The R Foundation for statistical computing). RNAseq data of TCGA bladder cohort was downloaded from website "https://genome-cancer.ucsc.edu/proj/site/hgHeatmap/", "TCGA_BLCA_exp_HiSeqV2-2015-02-24". All genes were enrolled in the univariate Cox hazard ratio model. We used a reduced multivariate Cox regression model, only genes fulfilled $P<0.10$ in univariate model were enlisted. A consecutive cohort with 172 patients in Fudan University Shanghai Cancer Center was treated as external validation set.

Results: Only with intact clinical and follow up data were enrolled and finally a total of 327 patients in TCGA cohort were enrolled. We identified 236 genes, from 9 published papers on OS of MIBC. Using the TCGA Database we identified a total of 12 genes that correlated with OS ($P< 0.05$ in univariate and multivariate analysis both). By integrating these genes with the RT-qPCR data in our validation data set, we confirmed that the 12-gene panel prediction power of OS (the AUC were 0.741 and 0.727, respectively) was higher than just clinical data (including sex, age, T stage, grade and N stage) only (the AUC were 0.667 and 0.631, respectively). And combining the clinical and 12-gene data together, the AUC can increase to 0.768 and 0.757 respectively.

Conclusion: Applying published gene signatures and TCGA data; we successfully build and externally validate a novel 12-gene signature for OS of MIBC. The improved prediction for these high risks of disease progression or survival will be helpful to doctor-patients consultation and finally benefit our patients.

UP.115

Is Excision Necessary in the Management of Urachal Remnants? A 12- Year Experience at a Single Institution

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Introduction and Objective: Urachal anomalies are usually seen in children and most are presumed to be benign. Urachal remnants that persist into adulthood are rare but have the potential to become malignant due to exposure to chronic urinary stasis, infection and inflammation. Few studies have looked at urachal anomalies in adults and so the ideal management of an uncomplicated urachal anomaly is debatable with some advocating excision of every urachal remnant. We aim to review the management of urachal remnants within a single institution.

Materials and Methods: This is a retrospective review of clinical notes and imaging of patients who had been diagnosed with urachal anomalies at Changi General Hospital, Singapore.

Results: Forty-five patients (15 female, 30 male) with urachal anomalies were identified in the period from 2005 to 2016. Thirty (66.7%) patients had incidental findings while 15 (33.3%) were symptomatic. Symptomatic patients included 5 patients who presented with infected remnants, 5 with haematuria, 3 with voiding symptoms, 1 patient with suprapubic discomfort and 1 with recurrent urinary tract infection. Eight patients underwent excision, 1 underwent an incision and drainage of abscess while 34 of the 36 remaining patients elected to undergo surveillance. Two patients were lost to follow-up. Histology was benign in 5 (62.5%) of the 8 patients who underwent excision. Malignancy was confirmed in 3 patients. There was interval stability of the urachal remnant in all the patients who had repeat imaging while on surveillance.

Conclusion: Urachal anomalies are uncommon in adults and are more likely to be diagnosed incidentally. The overall incidence of histologically confirmed malignancy in our series was 6.7%.

UP.116

Initial Experience of Transurethral Resection of Bladder Tumor under Narrow-Band Imaging: Prospective, Randomized Comparison with White-Light Cystoscopy

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Introduction and Objective: We investigated whether NBI (Narrow-band imaging) cystoscopy to heighten the detection rate of bladder tumor in transurethral resection of bladder tumor.

Materials and Methods: We included patients underwent transurethral resection of bladder tumor from December 2013 to September 2016 by one physician in Korea University Anam Hospital. We divided patients into the NBI cystoscopy group and the WLC(White light cystoscopy) only group through ran-

UP.116, Table 1. The Comparative Data between WLC (White Light Cystoscopy) Group and NBI (Narrow-Band Imaging) Cystoscopy Group

	Patient			Tumor		
	WLC	NBI	Additional	WLC	NBI	Additional
No tumor	10	9	23	29	74	45
CIS	2	3	6	15	21	6
(CIS+Ta)	3	4		1	1	
(CIS+T1)	7	8		28	28	
(CIS+T2)	2	2		2	2	
Ta	33	32	2	79	82	3
T1	9	8	2	15	19	4
T2	5	5		5	5	
Total	71	71	33	174	232	58
Cancer detection rate	61/71 = 85.9%	62/71 = 87.3%	10/33 = 30.3%	145/174 = 83.3%	158/232 = 68.1%	
Recurrence		p-value				
Recurrence-free rate (1yr)	71.9%	86.7%				
Recurrence-free rate (18month)	43.9%	57.8%	0.656			
Recurrence-free time (day)	553	604	0.82			

domization and investigated the number of tumors that were diagnosed with cancer or found during surgery in both groups and compared the recurrence rate for 12 and 18 months in both groups.

Results: A total of 142 patients were divided into the WLC group and NBI group each consisting of 71 and 71 patients, respectively. In the WLC group, 61 patients had been diagnosed with bladder cancer where 145 bladder tumors out of a total 174 bladder tumors were diagnosed with bladder cancer. In the NBI group, 62 patients had been diagnosed with bladder cancer where 158 bladder tumors out of a total of 232 bladder tumors were diagnosed with bladder cancer. Additional tumors that had been detected in the NBI group were 33 patients amongst where 10 patients had been diagnosed with cancer. In the NBI group, 13 additional cancers were found in 10 patients. The 1-year recurrence-free rate was 71.9% in the WLC group, 86.7% in the NBI group, and 553 days and 604 days in the recurrence-free time, respectively and did not show a statistically significant difference.

Conclusion: The number of patients diagnosed additionally with bladder cancer via NBI cystoscopy was 10. It suggests the significant role in detection bladder cancer of NBI cystoscopy. Despite of no significant difference in recurrence rates between the two groups, it can be anticipated that significant difference may exist when long-term observation is carried out.

UP.117

Carcinoma in Situ Bladder Cancer: Long Term Follow Up

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Introduction and Objective: It is known that the carcinomas in situ have a worse prognosis; however, not enough studies that involve exclusively this kind o tumor have been done. The objective of this study is to describe the behavior of the carcinomas in situ of the bladder and its overall survival.

Materials and Methods: This is a retrospective study made in the University Hospital of Mostoles-Madrid between January 2000 and December 2010, in which out of 403 de novo lesions were resected by transurethral resections, 58 in situ bladder carcinomas where detected with no other association. The follow up was until December 2016 and the Kaplan-Meier and Log-rank curves were used.

Results: The mean of age was 67.4 years old (+/- 9.23 SD), 93.1% (54 cases) were men and 6.9% (4 cases) were women. The median follow-up was 78.8 months (RIC 25-75 40-95 months). The mean of evolution time since the beginning of symptoms and the diagnosis was 5.5 months (RIC25-75 2-12 months). The most common clinical presentation was haematuria in 63.8% (37 cases) followed by lower urinary tract symptoms (LUTS) in 25.9% (15 cases). The cytology was positive in 89.4% (42 cases), and negative in 10.6% (5 cases), the carcinoma in situ was focal in 43.1% (25 cases) and non-focal or diffuse 56.9% (33 cases). 54 patients (93.1%) received BCG 81 mg doses with a pattern of induction and reinforcements during 3 years. 36.2% (21 cases) had recurrences and 27.6% (16 cases) progression. The overall survival rate was 50% and the cancer specific survival rate was 77.6% (Kaplan-Meier) for the in situ tumors, and in comparison for the non muscle invasive tumors an overall survival rate of 70.2% (p<0.0001) and cancer specific survival rate of 91.3% (p<0.0001 Log-rank).

Conclusions: Carcinoma in situ of the bladder implies a worst prognosis and lowers notably the overall survival and cancer specific survival, therefore this group of patients should imply a more strict treatment approach.

UP.118

Patterns of Use and Outcomes of Intravesical Bacillus Calmette-Guerin for Non-Muscle Invasive Bladder Cancer: A Retrospective Cohort Study

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Introduction and Objective: Intravesical Bacillus Calmette – Guerin (BCG) is recommended as the primary adjunct therapy for high and select intermediate risk non-muscle invasive bladder cancer (NMIBC). For optimal efficacy, several authoritative guidelines recommend BCG administration at a maintenance schedule. Despite this recommendation, maintenance therapy remains underused. We aimed to evaluate the patterns of BCG use and its impact on outcomes in NMIBC patients at an Australian tertiary centre.

Materials and Methods: Medical records were retrospectively assessed between 2009 and 2013 for patients referred for BCG therapy. Data collated from electronic medical records included: patient demographics, pathological diagnostics, treatment details, follow-up and oncological outcomes. The maintenance schedule involved BCG instillations weekly for three weeks, every three months for one year. Recurrence was confirmed on cystoscopy and/or histology, and presence of muscle invasion was considered as progression. T-test, Fisher's exact test and Kaplan Meier regressions were used.

Results: Data for 170 patients who received BCG therapy was assessed. Preliminary analysis demonstrates 24% of patients completed maintenance therapy. Only 9 patients (10%) in the BCG maintenance arm had recurrences. No patients receiving maintenance BCG progressed. Kaplan Meier regression displayed a 74% risk reduction of recurrence.

Conclusion: Extending BCG therapy to maintenance can further minimise the progression and recurrence of urothelial bladder carcinoma versus BCG induction alone. Despite this, BCG maintenance remains underutilised. The reasons for the low utility of maintenance BCG are unclear but should be the focus for further study.

UP.119

Bacillus Calmette-Guerin Worldwide Shortage – Impact on Outcomes and Management of Non-Muscle Invasive Bladder Cancer

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Introduction and Objectives: Intravesical Bacillus Calmette - Guerin (BCG) immunotherapy is standard therapy for high-risk non-muscle invasive bladder cancer (NMIBC). However, ongoing issues in its manufacturing have resulted in supply setbacks and consequently two recent worldwide shortages. This study aimed to investigate the patterns of BCG use in a single centre during the 2014 to 2015 shortage period, its effect on overall management and outcomes of NMIBC in an Australian setting.

Materials and Methods: A retrospective audit of medical records for patients indicated for BCG therapy from 2014 to 2015 in a single tertiary centre was undertaken. Data regarding use of BCG and/or alternatives to BCG was captured. Cystoscopy and histological reports were used to confirm recurrence and progression of disease. Death related to bladder cancer was identified on medical records.

Results: The BCG shortage pressured a change in management strategy in patients with NMIBC. Clinical prescription patterns in this Australian tertiary setting skewed away from the standard intravesical BCG immunotherapy, and towards different schedules and doses of BCG, and intravesical chemotherapy.

Conclusion: Despite global production levels now returning to an adequate baseline, the issue of future BCG shortages still remains relevant, with a projected future shortage. This poses ongoing uncertainty surrounding NMIBC management in Australia. Other treatment options for patients with high-risk NMIBC need to be considered.

UP.120

Polymorphisms in SRD5A1 and SRD5A2 Genes do not Affect Prostatic Enlargement in Korean Population

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Introduction and Objective: The role of the SRD5A1 and SRD5A2 genes for prostatic enlargement and progression of benign prostatic hyperplasia (BPH) is debatable due to an interracial difference. Therefore, a study, about the relationship between single nucleotide polymorphisms (SNPs) on the SRD5A1 and SRD5A2 genes and the risk of BPH in Korea, was performed.

Materials and Methods: Two hundred twenty one patients with BPH were recruited. Six SNPs (rs472402, rs3822430, rs248805, rs39848, rs2677933, and rs3736316) in SRD5A1 gene and four SNPs (rs9332960, rs1 247014, rs1246791, and rs2754530) in SRD5A2 gene were selected and analyzed using direct sequencing. Multiple logistic regression analysis was conducted to evaluate associations between these SNPs in two genes and clinical parameters which characterize severity of BPH.

Results: The mean age of the patients was 65.5 (39 – 96) years old. The mean international prostate symptom score (IPSS), prostate specific antigen (PSA), peak flow rate (Qmax) and total prostate volume revealed 17.3 ± 0.6, 4.58 ± 0.36 ng/ml, 11.2 ± 0.4 ml/s and 39.0 ± 1.5 ml, respectively. Genotype distributions and allele frequencies of SNPs in SRD5A1 and SRD5A2 genes which were selected in this study had no relationship with prostate volume larger than 30ml ($p>0.05$). Furthermore, other parameters of BPH, such as PSA, IPSS, or peak urine flow rate, also had no associations with these SNPs ($p>0.05$).

Conclusion: The associations were not observed between the polymorphisms of the SRD5A1 and SRD5A2 genes and prostate volume, IPSS, PSA and uroflowmetry in Korean population.

UP.121

Simple Prostatectomy for Giant Benign Prostatic Hyperplasia in Sub-Saharan Africa: Case Series and Literature Review

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Introduction and Objectives: Benign prostatic hyperplasia (BPH) is a common cause of bladder outlet obstruction in men worldwide. African men are known to have larger prostate volumes than other races. Giant benign prostatic hyperplasia (GBPH) is defined as prostate size greater than 200 grams. Management of GBPH is associated with several challenges which have been under-reported from the African sub-region. We highlight the peculiarities of clinical presentation, surgical management and outcome of GBPH cases at the Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife, South-western Nigeria between January and December 2016.

Materials and Methods: All men with BPH and trans-rectal ultrasound estimated prostate size above 200g planned for simple prostatectomy over the 1 year period were prospectively studied. Demographic characteristics, clinical presentation, intra and post-operative details were entered into a proforma and analysed using SPSS version 22.

Results: Four patients with GBPH had simple prostatectomy during the period under review. Their age-range was 68-78 years (mean age- 73.7 years). They all presented with lower urinary tract symptoms (LUTS), gross haematuria and recurrent urinary tract infections. One (25.0%) also had chronic urinary retention (CUR) and impaired renal function which normalised following continuous bladder drainage. Three patients (75.0%) required pre-operative blood transfusion to correct anaemia. Two of them (50.0%) had emergency prostatectomy on account of recalcitrant haematuria. Three patients had transvesical prostatectomy (75.0%) while one had retropubic prostatectomy (25.0%). The enucleated prostate glands were found to weigh 312.1g, 396.4g, 420.8g and 450.0g respectively with mean weight of 394.8g. They all had blood transfusion post-operatively (average of 2 units of blood) with relatively longer hospital stay (mean 5 days). There was resolution of the LUTS and other symptoms after surgery and none had urinary incontinence, erectile dysfunction or surgical site infection in the post-operative period.

Conclusion: The surgical management of GBPH can be challenging. Recalcitrant haematuria, LUTS, CUR and renal impairment are possible modes of presentation. Open prostatectomy is the best option for treatment in our environment. It is associated with improved quality of life and minimal morbidity in expert hands.

UP.122

Improvement of Persistent Detrusor Overactivity Treated by Plant Combination

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Intoduction and Objective: Many patients with benign prostatic hyperplasia need treatment for remaining storage symptoms after surgery. Therefore, we evaluated the effect of plant combination on persistent detrusor overactivity (DO) after relief of bladder out let obstruction (BOO).

Materials and Methods: Rats were assigned as 3 groups; control (n=6), persistent DO (n=6), and persistent DO treated with the plant combination (n=6) groups. Persistent DO after relief of partial BOO was made and 6 of them were orally administered with the plant combination. After 4 weeks administration cystometry was performed. And then 8-hydroxy-2'-deoxyguanosine (8-OHdG) and superoxide dismutase (SOD) were measured for the evaluation of oxidative stress in the bladder. Pro-inflammatory cytokines as interleukin-8 (IL-8) and tumor necrosis factor-α (TNF-α) were analyzed. M2 and M3 muscarinic receptor of the bladder were analyzed.

Results: Significantly increased contraction pressure and decreased contraction interval were observed in persistent DO group after relief of BOO was observed. Moreover, oxidative stress, pro-inflammatory cytokines, and M3 muscarinic receptor were significantly increased. After treatment with the plant combination, significantly reduced DO by cystometry was observed compared with persistent DO group. Additionally, significantly decreased oxidative stress, pro-inflammatory cytokines, and M3 muscarinic receptor in the bladder were observed after treatment with the plant combination.

Conclusions: Treatment with the plant combination improves persistent DO after relief of BOO mediated by antioxidative and anti-inflammatory effect. Further study is necessary to identify exact mechanism of treatment effect of the plant combination.

UP.123

Bladder Wall Thickness and Detrusor Wall Thickness Can Help Predicting the Bladder Outlet Obstruction in Men over the Age of 70 Years with Symptomatic Benign Prostatic Hyperplasia

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Introduction and Objective: We investigated the possible association between preoperative bladder wall thickness (BWT) or detrusor wall thickness (DWT) and bladder outlet obstruction (BOO) based on urodynamic studies in men with symptomatic benign prostatic hyperplasia (BPH).

Materials and Methods: Data were prospectively collected from a BPH surgery database. A total of 196 men who underwent prostate vaporization for symptomatic BPH were included in this study. BWT and DWT were measured in the suprapubic area after uroflowmetry.

Results: No significant difference was noted in BWT and DWT in any patient according to the presence of BOO; however, subgroup analysis showed that BWT and DWT were significantly thicker in the obstruction group in men aged 70 years or older than in those under age 70 (BWT: 3.6 + 0.9 mm vs. 3.1 + 0.9 mm, P-value = 0.022, DWT: 2.8 ± 0.8 mm vs. 2.3 ± 0.8 mm, P-value = 0.007). In this older age group, the classification based on a BWT ≥4.0 mm showed 31% sensitivity, 87% specificity, and 65% diagnostic accuracy for the diagnosis of BOO, whereas DWT ≥3.0 mm showed 49% sensitivity, 82% specificity, and 69% diagnostic accuracy.

Conclusion: BWT and DWT were associated with BOO in men aged 70 years or older. Therefore, BWT and DWT will be a useful non-invasive parameter for deciding management strategy for elderly men with symptomatic BPH. An appropriate measurement method should be established as soon as possible for further application of the relationship among BWT, DWT and BOO.

UP.123, Table 1. Patient Characteristics

	Mean ± SD or Number (Percentage)
Patients demographics	
Patient number	196
Age (year)	69.5 ± 6.9
BMI (kg/m2)	24.2 ± 2.8
Comorbidities	
DM	37 (18.9%)
HTN	91 (46.4%)
Ultrasonography	
Prostate volume (mL)	55.8 ± 27.8
Transitional zone volume (mL)	33.6 ± 22.4
BWT (mm)	3.4 ± 1.1
DWT (mm)	2.6 ± 0.9
PSA (ng/mL)	5.4 ± 4.7
Symptom Scores	
Total IPSS score	20.5 ± 8.8
Voiding Symptom subscore	12.4 ± 5.8
Storage Symptom subscore	8.2 ± 3.9
Quality of life score	4.2 ± 1.3
Uroflowmetry	
Qmax (mL/sec)	8.5 ± 4.4
Post void residual urine (mL)	70.5 ± 96.6
Urodynamic Study	
MUCP (cmH2O)	76.5 ± 30.2
First desire to void (mL)	200.7 ± 96.5
Normal desire to void (mL)	252.7 ± 102.5
Strong desire to void (mL)	333.8 ± 106.5
Maximal cystometric capacity (mL)	346.7 ± 121.9
Pressure at Qmax (cmH2O)	54.4 ± 25.4
Compliance	
Good	175 (89.3%)
Poor	21 (10.7%)
Involuntary detrusor contraction	112 (57.1%)
BOO index	40.8 ± 32.6
Obstructed	84 (42.9%)
Equivocal	64 (32.7%)
Unobstructed	48 (24.5%)

BMI: body mass index; DM: diabetes mellitus, HTN: hypertension; DWT: detrusor wall thickness; BWT: bladder wall thickness; PSA: prostate specific antigen; IPSS: international prostatic symptom score; Qmax: maximal flow rate; MUCP: maximum urethral closure pressure; BOO: bladder outlet obstruction

UP.123, Table 2. BWT and DWT According to the BOO Index and Age Groups

BOO index	BWT	DWT
All patients		
Obstructed (88)	3.6 ± 1.1	2.7 ± 0.9
Unobstructed (108)	3.3 ± 1.1	2.5 ± 0.9
P-value	0.051	0.081
Patients < 70 years old		
Obstructed (50)	3.6 ± 1.2	2.6 ± 1.0
Unobstructed (47)	3.5 ± 1.2	2.6 ± 1.0
P-value	0.537	0.979
Patients ≥ 70 years old		
Obstructed (61)	3.6 ± 0.9	2.8 ± 0.8
Unobstructed (38)	3.1 ± 0.9	2.3 ± 0.8
P-value	0.022	0.007

DWT: detrusor wall thickness; BWT: bladder wall thickness; BOO: bladder outlet obstruction

UP.124

Correlation of Prostatic Urethral Length with the Severity of Urinary Symptom and Peak Flow Rate in Men with Benign Prostatic Hyperplasia

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Introduction and Objective: To evaluate the effects of prostatic anatomical factors on male lower urinary tract symptoms (LUTS) and the peak flow rate (Qmax) in patients with benign prostatic hyperplasia (BPH).

Materials and Methods: Records were obtained from a prospectively maintained database of first-visit men

UP.123, Table 3. BOO Index Profiles According to BWT (4mm) and DWT (3 mm)

		BOO index			P-value
		Obstructed	Unobstructed	Total	
All patients					
BWT	< 4mm	54	87	141	<0.029
	≥ 4 mm	30	25	55	
		84	112	196	
DWT	< 3 mm	48	83	131	<0.010
	≥ 3 mm	36	29	65	
		84	112	196	
Patients ≥ 70 years old					
BWT	< 4mm	27	52	79	0.033
	≥ 4 mm	12	8	20	
		39	60	99	
DWT	< 3 mm	20	49	69	<0.001
	≥ 3 mm	19	11	30	
		39	60	99	

DWT: detrusor wall thickness; BWT: bladder wall thickness; BOO: bladder outlet obstruction

UP.124, Table 1. Relationship between IPSS and Prostatic Factors in Multiple Linear Regression Analysis

IPSS sum			
Factor	**Standardized Coefficient**	**t value**	**p value**
Age	.393	2.461	.015
P_Volume	.022	.167	.868
PUA	.048	.528	.598
IPP(mm)	-.041	-.828	.409
PL(cm)	.525	2.644	.009

with LUTS/BPH. Patients whose total prostate volume (TPV) was greater than 40 mL were excluded; 156 patients were enrolled in the study. The TPV, intra-vesical prostatic protrusion (IPP), prostatic urethral angle (PUA) and prostatic urethral length (PUL) were measured by trans-rectal ultrasonography. LUTS were evaluated using the International Prostate Symptom Score (IPSS). Uroflowmetric measurements were also made.

Results: In univariate analysis using Pearson correlation analysis, PUA (r=0.046, P=0.571), TPV (r=0.043, P=0.597), IPP (r=-0.108, P=0.181) and PUL (r=0.104, p=0.198) was not significantly correlated with the IPSS. In multivariate analysis using multiple linear regression analysis, PUL was significantly associated with IPSS (Standardized Coefficient =0.525, t value= 2.644, p=0.009) and with Qmax (Standardized Coefficient =0.554, t value= 2.399, p=0.018). For IPSS of 20 or greater, the area under the ROC curve (AUC) of PUL was 0.557 and the cut-off value was 3.8 cm. When Qmax was 10 mL/s or less, the AUC of PUL was 0.554 and the cut-off value was 4.1 cm.

Conclusion: PUL has a significant association with symptom severity and Qmax among prostatic anatomical factors analyzed in men with LUTS and BPH. PUL might be considered as an important clinical factor in male LUTS management. Further study may be needed.

UP.125

PVR Over 250 ml – What To Do?

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Introduction and Objective: The post void residual volume (PVR) is an abnormal finding in any circumstance; still some patients have significantly higher volumes than others. The aim of this paper is to review the conditions behind the high PVR, the evaluation protocol and the treatment used.

Materials and Methods: This is a retrospective study evaluating the hospital files of patients in the last four years who had a PVR of more than 250 ml at the initial evaluation, regardless of their symptoms. Only patients in which follow up data was available were included in our review so evolution after treatment and complications could be also recorded.

Results: A total of 36 patients were included. The most common cause of high PVR in our series was a neurogenic bladder (23 cases). Other causes include detrusor-sphincter dyssinergia (6 cases), underactive detrusor (4 cases) or areflexive bladder (3 cases). Although some patients presented some degree of mechanical obstruction, all of them also presented another condition from the ones mentioned before, which increased the PVR. Urodynamics was not routinely performed during the initial evaluation but was performed at one of the following visits for a better understanding of the behavior of the bladder. Treatment options were surgical desobstruction, which failed to solve the PVR in all cases, CIC, very effective but not easily accepted by the patient, and the use of provocative maneuvers, which also did not cure the PVR. One patient underwent sacral neuromodulation, PVR remained present. 86% (31 cases) of our patients had at least one symptomatic UTI episode and 25% (9 cases) had some degree of renal faliure.

Conclusions: Obstruction alone is not explanatory for a high PVR. Urodynamic testing should be done during the initial evaluation, considering the relatively low number of patients with this condition. An increased PVR does not indicate surgery, but should lead to in-depth evaluation. CIC is still the ultimate treatment in such cases, although most patients are initially reluctant to it. Standardization of treatment is not possible for high PVR patients.

UP.126

Breaking Down the Enigma of Postmicturition Dribble - A Literature Review and Management Algorithm

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Introduction and Objective: Post-micturition dribbling is a poorly understood condition. It describes benign involuntary leaking of urine immediately after micturition. With a prevalence of 11.5% of men in their 20s rising to 63% over 60s it has a significant impact on patient's quality of life.

Materials and Methods: We carried out a literature review of post micturition dribble aetiology to inform management strategies.

Results: The literature supports 2 main theories neither unrelated to bladder or prostate pathology: Theory 1: Weakness in bulbospongiosus and ischiocavernosus muscles. These muscles assist in clearing the urine. Causes include obesity, lack of fitness, straining from constipation, chronic cough and persistent heavy lifting. Neurological pathology such as pudendal nerve injury is also sited. Theory 2: Failure in the urinary milk- back mechanism. This is supported by findings on micturating- videocystography showing a bulbar residue between the external sphincter and bladder neck when asked to halt urinary flow. When the external sphincter relaxes, urine falls into the bulbar urethra causing dribbling. Optimal therapy targets the cause. One RCT concluded that pelvic floor exercises showed a greater reduction in urine loss compared to those managed with urethral milking. Pelvic floor exercises and physiotherapy are therefore strongly encouraged for Theory 1. Urethral milking forms the treatment basis for theory 2. The literature also highlights association with sexual dysfunction.

Conclusion: We propose a multi-disciplinary treatment algorithm for the management of these patients including targeting causation, physiotherapy and treating associated sexual dysfunction. Further studies to assess results of different management approaches are required.

UP.127

Current Status and Factors Associated with Persistent Medication after Holmium Laser Enucleation of Prostate in Patients with Benign Prostatic Hyperplasia

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Introduction and Objective: Some patients have persistent urinary symptoms after Holmium laser enucleation of prostate (HoLEP) and require pharmacotherapy. We investigated the current status and factors associated with persistent medication after HoLEP in patients with benign prostatic hyperplasia (BPH).

Materials and Methods: We retrospectively analyzed the records of 222 patients who had undergone HoLEP for LUTS/BPH. Patients with prostate cancer diagnosed previously or after HoLEP or those with neurogenic causes were excluded. We evaluated the type of LUTS and the proportion of patients taking medications for LUTS that persisted more than 3 months postoperatively. Patients were assigned to two groups: persistent medication group and medication free group. Preoperative and intraoperative factors between the two groups were compared. Preoperative factors included age, comorbidities (diabetes mellitus, hypertension), prostate volume, serum PSA, history of acute urinary retention (AUR), urgency incontinence, the International Prostate Symptom Score (IPSS), and urodynamic parameters. Intraoperative factors included operation time, used energy, weight of the enucleated prostate and efficiency of enucleation and morcellation.

Results: Patients with lower urinary tract symptoms (LUTS) had the following symptoms that persisted for >3 months postoperatively: frequency (41.8%), urgency (43.2%), nocturia (70.8%), weak stream (20.6%), stress incontinence (12.2%), and urgency incontinence (9.8%). There were 108 patients (48.6%) in the persistent-medication group and 114 (51.4%) patients in the medication-free group. The types of medication used in the persistent medication group were: α blocker monotherapy, 21.3% (n = 23); anticholinergic monotherapy, 39.8% (n = 43); α block-

er and anticholinergic combination therapy, 23.1% (n = 25); α blocker and cholinergic agonist combination therapy, 10.2% (n = 11); and desmopressin 5.6% (n = 6). Multivariate analysis of pre and intraoperative factors showed that a history of hypertension (OR, 2.347; P = 0.004) and IPSS storage subscores (OR, 1.110; P = 0.010) were significantly associated with postoperative medication.

Conclusion: Many patients with LUTS need pharmacotherapy after HoLEP. History of hypertension and IPSS storage subscores are possible risk factors.

UP.128

Characteristics of Patients with Persistent Lower Urinary Tract Symptoms after Holep in BPH

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Introduction and Objective: Holmium laser enucleation of the prostate (HoLEP) in BPH is widely used and the effects are known to be equivalent or better than traditional TUR-P with low incidence of complications. However, some patients who underwent HoLEP still have the lower urinary tract symptoms(LUTS) after surgery. We evaluated the characteristics of patients who visited our clinics due to persistent LUTS and required additional medications after HoLEP in BPH patients.

Materials and Methods: The medical records of the patients who underwent HoLEP from March of 2011 to June of 2015 were reviewed retrospectively. The analysis was performed in patients who have been followed for more than 6 months after surgery. The patients were divided into 2 groups. Group A is the patients with persistent obstructive symptoms and group B is with irritation symptoms. Age, prostate specific antigen, International prostate symptom score (IPSS), prostate volume, transition zone volume of prostate, peak flow rate, maximum cystometric capacity, post voided residual volume, resected weights, operation time were analyzed.

Results: Among the 482 patients who underwent the HoLEP, the numbers of patients who required the medicine for lower urinary tract symptoms were 138 (28.6%). Among the patients, 53 patients (40.2%) were enrolled in Group A and 85 patients (59.8%) were enrolled in Group B. The mean age, total IPSS, PSA, total prostate volume, peak flow rate, maximum cystometric capacity, post voided residual volume, and operation time between two groups were statistically insignificant. However, transition zone volume and resected weights were significantly different between group A and B. (p=0.017, p=0.010 respectively)

Conclusions: More than 25 % of the patients were still taking the medicines for lower urinary tract symptoms after HoLEP. Among the patients who required the medicine, 60% of patients have complained of irritation symptoms. Bigger transition zone with resection weights were correlated with remaining of postoperative irritation symptoms.

UP.129

Rapid versus Gradual Bladder Decompression in Patients with Acute Urinary Retention

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Introduction and Objective: Acute urinary retention (AUR) represents one of the most frequent emergencies in urology. The initial management consists of the placement of a bladder catheter. Gradual decompression (GD) of the bladder is believed to decrease the risk of hematuria compared to Rapid decompression (RD). "Intermittent clamping" is more time-consuming and is complex compared to rapid drainage.The aim of this study is to compare the occurrence of hematuria among AUR patients who underwent rapid versus slow bladder decompression. A secondary objective was to determine factors predictive of hematuria ex-vacuum.

Materials and Methods: A prospective cohort study was performed between June 1st and October 30th, 2016. We included 72 adult male patients with AUR who consulted our institution emergency room. Patients were randomized based on the day of the consultation for continuous bladder emptying or for a ratio of 200 ml alternated by a clamping of 2 minutes (Gradual decompression). Patients were observed for at least 2 hours. Hematuria was defined as the presence of macroscopically visible blood after placement of the catheter. Patients with traumatic catheter placement were excluded. Data analysis was performed with the Chi-square test, T test, and logistic regression.

Results: The mean age was 69.8 years (19-91). Of 72 patients 49 (68.1%) were randomized to RD and 23 (31.9%) to the GD group. The groups did not present statistically significant differences in age, anticoagulation, and type of probe used or volume retained. Hematuria was evidenced in 3 (6.1%) of the patients with rapid emptying and in 3 (13%) of patients drained with the intermittent clamping technique (Fisher Test p 0.376). No hematuria required intervention or decompensated the patients. Rapid bladder decompression factor was not a predictor of hematuria in the uni and multivariate analysis. The volume retained was a predictor of hematuria. An OR of 1.33 (95% CI 1.02-1.42) was estimated for each 100 ml retained.

Conclusions: We did not find a significant difference between patients who presented hematuria with rapid or slow decompression after an AUR. The retained volume was the only significant predictor of hematuria.

UP.130

Is Irrigation Necessary after Monopolar Turp? Our 11 Years Experience

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Introduction and Objective: This study was conducted to evaluate efficacy and safety of monopolar transurethral resection of the prostate without post operative irrigation.

Materials and Methods: During the period between Jan 2004 and Dec 2014. A total of 993 patients underwent monopolar transurethral resection of the prostate (TURP) in our hospital. All patients were evaluated pre-operatively for prostate size and co morbidities. We performed standard monopolar TURP in all the patients. Meticulous attention was given for hemostasis during the procedure and irrigation was not started. Post-operatively patients were closely monitored for 3rd hourly urine output, hospital stay, catheterization time, need for blood transfusion and complications were recorded. Outcomes were compared with results reported in literature on TURP with irrigation

Results: A total of 993 patients underwent monopolar TURP. The average age was 66.1 years. 505 (54%) had hypertension, 354 (37.7%) had diabetes and 140 (14.9%) had ischemic heart disease. Mean preoperative prostate weight was 47.1 gm. The mean weight of resected prostate tissue was 21.6gm. 900 (96.25%) were managed without irrigation and 35 (3.74%) required irrigation postoperatively. Post-operatively blood transfusion was required in 19 patients (2.04%), bladder wash in 23 (2.4%), clot retention occurred in 2.3%, mean duration of catheterization was 48 hours and hospital stay was 3.2 days.

Conclusion: Monoploar TURP without irrigation is safe, and has comparable complications in comparison TURP with irrigation. Irrigation is not always necessary after TURP if meticulous attention is given to the technique, hemostasis and by maintaining adequate output in post operative period.

UP.131

Short Term Comparison between Bipolar and Monopolar Transurethral Resection of Prostate in Suez Canal University Hospital and Damietta Specialized Hospital

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Introduction and Objective: To compare bipolar versus monopolar transurethral resection of the prostate regarding advantages, disadvantages, safety and efficacy.

Materials and Methods: In a prospective randomized trial 130 patients with symptomatic bladder outlet obstruction due to benign prostatomegally alternatively underwent either standard monopolar TURP M-TURP group1 GI or bipolar TURP B-TURP GII. All patient underwent demographic evaluation.preoperative prostatic volume IPSS, maximum flow rate (Qmax), post voided residual urine PVR ,operative time, resection time, haemoglobin loss HB, sodium loss ,postoperative irrigation volume, catheterization period, hospital stay, clinical and urodynamic evaluation.

Results: All patients completed the study 65 in each group. The main age of patient 64.5+5 ,64.6+7.5 in GI, GII respectively, prostate volume (58.7±16.5), (61.8±14) gm in GI, GII respectively, serum PSA (3+1), (3+2) ng/dl preoperative HB (13±1), (13±2), serum sodium (138.9±3.1), (138.7±4.2) mEQ,

IPSS score (21.8±3.1),(21.7±3.3), Qmax (9.6±1.7), (9.8±1.7) and operative time (77.9±20.5), (74.8±12.5) minutes in GI, GII respectively which comparable in both group with no statistical significant. Resection time (58.7±17.8),(57.5±10.8) minutes with statistical significant difference. Immediate postoperative HB, serum sodium values (11.2±1.2), (11.9±1.7) gm/dl, (133.7±3.6), (136.3±4.3) MEQ/dl in GI, GII respectively with statistical significant difference. There was significant reduction in postoperative irrigation with saline (15.3±4.4), (8.8±2.4)/L, catheterization period (3.9±0.9), (1.8±0.7) day, hospital stay (3±1), (2.1±0.8) day in GI, GII with highly significant statistical difference (p<0.001). Only one case need blood transfusion in GII and 5 cases in GI, Clot retention occur in one case in GII and 4 cases in GI revealed highly significant difference. Postoperative IPSS,Qma, PVR (11.8±2.5), (11.2±1.6), (15.7±1.7), (16.6±1.8)ml/sec, (43±69), (42±54) ml in GI, GII respectively with highly statistically significant difference in comparison to preoperative values.

Conclusion: Short term results of our study revealed B-TURP is promising technique with comparable efficacy as M-TURP faster resection time, minimal blood loss , minimal change in serum sodium ,shorter cathetrization period and hospital stay. But our results in need more consolidation by multicenter study with large number of patient and extended follow-up period.

UP.132

Efficacy of Oral Antimuscarinics in the Prevention of Urinary Incontinence and Storage Symptoms Following Photoselective Vaporisation of the Prostate with 180w Xps Greenlight Laser

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Introduction and Objective: The appearance of storage symptoms in the early postoperative period after surgery with laser techniques for benign prostatic hiperplasia is prevalent. Our objective was to assess the efficacy of postoperative oral antimuscarinics as a preventive strategy to decrease storage symptoms and incontinence following photoselective vaporisation of the prostate (PVP) with 180W XPS GreenLight laser.

Materials and Methods: We retrospectively reviewed 105 patients who underwent PVP in our institution. We divided them into two groups according to whether they received oral antimuscarinics (AM) or not (no AM) for a month after surgery. Qmax, IPSS, OABQ-SF and ICIQ-SF questionnaires are used in our department as protocol follow-up in these patients and were compared before surgery, and 3 and 9 months after. To establish homogeneity between the groups, we compared several pre, intra and post-surgical variables, without finding statistically significant differences.

Results: Up to 58 patients received oral AM and 47 patients did not. No statistically significant differences were found between the two groups in the IPSS, ICIQ-SF and OABQ-SF scores during follow-up. For both groups there was a statistically significant improvement between the first and second checkups after surgery in the mean score of the questionnaires. (Table 1).

UP.132, Table 1. Improvement between the First and Second Checkups after Surgery in the Mean Score of the Questionnaires

		First checkup (3 months)	Second checkup (9 months)
IPSS	no AM	11.89 + 2.39	8.81 + 1.94
	AM	12.65 + 2.43	10.46 + 1.64
ICIQ-SF	no AM	8.94	6.19
	AM	7.29	3.71
OABQ-SF	no AM	34.63	21.8
	AM	30.93	16.87

Conclusions: Storage symptoms and UI are frequent after PVP with 180W XPS Greenlight laser. Normally these symptoms improve over time irrespective to the previous use of oral antimuscarinics.

UP.133

Photoselective Vaporization of the Prostate Using Greenlight Xps Laser: Analysys of Outcomes and Complications

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Introduction and Objective: New minimally invasive techniques for the treatment of LUTS secondary to BPO have emerged in the last decades. Among them, photoselective vaporization of the prostate (PVP) using Greenlight (180W-XPS) laser has proven to be a safe and effective technique. Our objective has been to analyze the results of our series.

Materials and Methods: We retrospectively reviewed 105 patients who underwent PVP with greenlight laser between October 2012 and March 2016. Preoperative (age, PSA, prostate volume, IPSS, Qmax, medical treatment and ASA classification), intraoperative (surgical and laser application time, energy used, complications) and postoperative data (days of bladder catheterization, hospital stay, complications, IPSS and Qmax) were analyzed.

Results: The main characteristics of our patients are listed in Table 1. The mean of the energy used was 300.000 J. The mean time of laser application was 30.71 minutes, and the mean surgical time 81.44 minutes. 5.7% of the patients suffered intraoperative complications, and 7.6% of the procedures had to be completed with TURP. The mean hospital stay was 2.3 days, and the mean lenght of bladder catheterization was 1.83 days. 30.5% of the patients suffered complications, mainly hematuria and UTI (Clavien-Dindo I 34.4%, II 37.5%, IIIA 12.5% and IIIB 15.6%). There was a statistically significant improvement in Qmax (from 8.4 to 15.27 ml/s) and the IPSS score (from 22.89 + 4.45 to 9.78 + 2.09) between the 6th and 9th month after surgery. Most of the patients were satisfied (51.9%) or very satisfied (17.7%) with the intervention, and most of them would recommend the surgery (71.8%).

UP.133, Table 1.

PREOPERATIVE VARIABLES (means)
Age: 68,75 years.
Prostate volume: 64,20cc
PSA: 3,33 ng/ml
Qmax: 8,74 ml/seg
IPSS: 22,7+4
Anticoagulants: 16,2%
Permanent bladder catheter: 31,4%
Previous medical treatment: **Alpha blockers:** 22,9% **Combined therapies:** 76,2%
ASA classification: ASA I-II: 59,6% ASA III-IV: 40,4%

Conclusions: PVP with greenlight laser is an alternative to TURP. From our series, we can highlight the clinical and flow improvement that patients present after surgery, and the low rate of severe complications.

UP.134

The Effect of Age on the Outcome of Transurethral Resection of Prostate

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Introduction and Objective: With a rising population of elderly patients, the mean age of patients undergoing transurethral resection of prostate (TURP) is advancing. We assessed the outcome of TURP in relation to the age of patients.

Materials and Methods: Data of patients who underwent bipolar TURP in two urology centres were prospectively collected between 2010 and 2014. Prostate size was assessed before TURP. Pre-operative and 3-month post-operative International Prostate Symptom Score (IPSS) and uroflowmetry results were collected. Analyses were done between < 80-year-old group and >/= 80-year-old group. Comparison was done with Fisher's test or 2-tailed t-test. Regression analysis was performed with Pearson correlation.

Results: Altogether 229 patients underwent bipolar TURP during the study period. The < 80-year-old group and >/= 80-year-old group shared similar prostate size (Table 1). The weight of prostatic chips

UP.134, Table 1. Patient Demographics and Pre-Operative Parameters

Variables	< 80 years old	>/= 80 years old	P value
Number of patients	133	86	
Mean age (years) ± SD	72.1 ± 6.1	83.7 ± 3.1	<0.0001
Mean pre-operative prostate size (ml) ± SD	64.3 ± 33.5	71.7 ± 34.7	0.31
Number of patients on Foley catheter	73	62	0.01
Number of patients on 5ARI	12	12	0.27
Pre-operative Qmax (ml/s) ± SD	8.2 ± 3.4	7.2 ± 2.6	0.48
Pre-operative RU (ml/s) ± SD	163.6 ± 172.2	50.7 ± 58.4	0.09
Pre-operative IPSS total ± SD	21.9 ± 6.3	18.6 ± 6.6	0.04
Pre-operative IPSS (storage domain) ± SD	9.9 ± 3.6	9.3 ± 3.6	0.47
Pre-operative IPSS (voiding domain) ± SD	12.5 ± 4.3	9.3 ± 4.4	<0.01
Pre-operative QoL score ± SD	3.6 ± 1.1	3.0 ± 1.2	0.03

Abbreviations: SD – standard deviation; 5ARI – 5-alpha reductase inhibitors; Qmax – maximal velocity on uroflowmetry; RU – residual urine; IPSS – International prostate symptom score; QoL – quality of life

UP.134, Table 2. Peri-Operative and Post-Operative Outcome

Variables	< 80 years old			>/= 80 years old		P value
Mean operation time (mins) ± SD	57.6 ± 28.8			56 ± 30.4		0.75
Mean prostatic chips weight (g) ± SD	21.1 ± 15.1			21.9 ± 14.2		0.69
Mean haemoglobin drop (g/dL) ± SD	0.46 ± 0.83			0.44 ± 0.96		0.85
Mean hospital stay (hours) ± SD	56.7 ± 25.4			88.1 ± 81.1		0.02
Successful self-void post-operatively	133			86		1.00
3-month Qmax (ml/s) ± SD	14.5 ± 7.5			11.6 ± 6.7		0.01
3-month RU (ml) ± SD	41.4 ± 62.5			57.2 ± 58.4		0.12
3-month IPSS total ± SD	10.0 ± 6.8			10.4 ± 6.6		0.71
3-month IPSS (storage domain) ± SD	6.6 ± 3.9			6.6 ± 4.2		0.86
3-month IPSS (voiding domain) ± SD	3.4 ± 4.4			3.7 ± 4.2		0.60
3-month QoL score ± SD	2.1 ± 1.2			2.0 ± 0.8		0.83
Pre- and post-operative comparison	**Baseline**	**3-month**	**P value**	**Baseline**	**3-month**	**P value**
Qmax	8.2 ± 3.4	14.6 ± 7.5	<0.0001	7.2 ± 2.6	11.6 ± 6.7	0.10
RU	163.6 ± 172.2	41.4 ± 62.5	<0.0001	50.7 ± 58.4	57.2 ± 58.4	0.78
IPSS total	21.9 ± 6.3	10.0 ± 6.8	<0.0001	18.6 ± 6.6	10.4 ± 6.6	<0.0001
IPSS storage domain	9.9 ± 3.6	6.8 ± 3.9	<0.0001	9.3 ± 3.6	6.6 ± 4.2	0.01
IPSS voiding domain	12.5 ± 4.3	3.4 ± 4.4	<0.0001	9.3 ± 4.4	3.8 ± 4.2	<0.0001

Abbreviations: SD – standard deviation; 5ARI – 5-alpha reductase inhibitors; Qmax – maximal velocity on uroflowmetry; RU – residual urine; IPSS – International prostate symptom score; QoL – quality of life

resected was similar (21.1g vs 21.9g, p=0.69). After operation, < 80-year-old group showed similar symptoms score as >/= 80-year-old group, but with a better uroflowmetry parameter. Regression analysis found advancing age having a negative correlation on uroflowmetry parameter but not symptoms score on the outcome of TURP (Table 3).

Conclusion: TURP in advanced age patients would produce less improvement in uroflowmetry parameter than the younger counterpart, but both groups benefited the same symptoms improvement.

UP.135

180-W Greenlight XPS Laser Vaporistaion of the Prostate for the Treatment of Benign Prostatic Obstruction: Our Experience

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Introduction and Objective: 180-W GreenLight XPS Laser (GL-XPS) vaporisation of the prostate in men with lower urinary tract symptoms (LUTS) due to benign prostatic obstruction (BPO) provides an alternative to transurethral resection of the prostate, with shorter hospital length of stay (LOS) and significant cost savings.

Materials and Methods: Retrospective review of GL-XPS procedures performed between April 2014 and December 2015. Outcomes were analysed and collated from a single UK centre, including; operative time, energy delivered, LOS, three-month follow-up functional parameters and treatment related Adverse Events (AEs) within a follow-up period of at least one year.

Results: One hundred and seventy-five patients had GL-XPS for LUTS due to BPO, mean age was 70.8years (range: 45-91years), mean operative time 43.8minutes (range: 6-120minutes), mean energy delivered 184.4kJoules (range: 14-924.8kJ) and 76.5% of cases done as day-case procedures (range of LOS: 0-3days). Average pre-operative maximum flow rate (Qmax) and post-void residual (PVR) were 8.3mls/sec (range: 3.3- 13mls/sec) and 213mls (range: 0-634mls), respectively. Average Qmax and PVR three-month post-operatively were 20.3mls/sec (range: 5.5-33.9mls/sec) and 58.3mls (range: 0-417mls), respectively, comparable to the GOLIATH study outcomes (Bachmann et al. European Urology 2014; 65: 931-942). Twenty-five patients had urinary retention (high-risk) with urethral catheters fitted pre-operatively, 22 of which voided successfully after GL-XPS, supplementing evidence to NICE guidance for high risk patients in retention undergoing GL-XPS. Different Clavien-Dindo grades AEs were reported in 35.4% of patients.

Conclusion: Provided appropriate service redesign, GL-XPS can be performed as a day-case procedure for the majority of cases, offering good surgical outcomes and efficient cost savings.

UP.136

We Recommend a Use of Photoselective Vaporization of the Prostate with 180W XPS Greenlight Laser as the Treatment of Benign Prostatic Hyperplasia at High Risk Patients on Oral Anticoagulants

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Introduction and Objective: Using photoselective vaporization of the prostate(PVP) with 180W XPS GreenLight laser of 3rd generation, patients at high risk may more safely undergo surgical treatment owing to better efficacy of coagulation and supply of powerful energy. We evaluated perioperative complications and functional outcomes after PVP with 180W XPS laser in benign prostatic hyperplasia (BPH) in high risk patients on oral anticoagulants.

Materials and Methods: Between Jan 2014 and Nov 2016, 41 patients of BPH on oral anticoagulants were enrolled at this study. They underwent PVP with 180W XPS laser, and followed up for 3 months. Data were collected on demographics, International Prostatic Symptom Score (IPSS), maximum flow rate (Qmax), post voiding residual urine (PVR), serum hemoglobin, sodium, transfusion, comorbidities, complications.

Results: The mean age was 72.8 years (range, 56-85) and mean baseline prostate volume was 55.6ml (31-125). Of patient 30 (73.1%) were on acetylsalicylic

UP.134, Table 3. Correlation between Increasing Age and Post-Operative Outcome

Variables	R	P value
Hospital stay (hours)	0.315	0.007
3-month Qmax	-0.3707	<0.0001
3-month RU	0.1899	0.014
Improvement between pre- and post-operative Qmax	-0.3502	0.016
3-month IPSS total	0.1169	0.126
3-month IPSS storage domain	0.026	0.740
3-month IPSS voiding domain	0.1112	0.154

Abbreviations: Qmax – maximal velocity on uroflowmetry; RU – residual urine; IPSS – International prostate symptom score; QoL – quality of life

acid, 19 (46.3%) were on warfarin, 9 (21.3%) were on clopidogrel and 6 (14.6%) were on 2 or more anticoagulants. Median American Society of Anesthesiology score was 3. Mean±SD operative time was 88.6±30.5 minutes and mean±SD energy use was 220±148kJ. The mean±SD decrease of postoperative hemoglobin was 0.8±0.2g/dL. Mean±SD catheterization time and hospital day were 2.3±1.2 days, 3.5±2.8 days, respectively. There were no major complications intraoperatively or perioperatively and one patient (2.4%) required blood transfusion with two pack of RBC without unstable hemodynamic state. Early complications (<1 month) were persistent hematuria required bladder irrigation of 12 patients (29.2%), recatheterization of 5 patients(12.1%), urinary tract infection of 3 patients (7.3%), reoperation due to urinary retention of one patient (2.4%). After 3 months, significant improvements in IPSS, Qmax, and IPSS were similar to previously reported studies of BPH with patients not taking oral anticoagulants.

Conclusion: These data demonstrated that PVP operation with 180W XPS laser can be performed safely and effectively as the treatment of BPH at high risk patients, even those who cannot stop oral anticoagulant requiring surgery. Few complications and significant durable clinical improvement were seen.

UP.137

Outcome of 980-Nm Diode Laser Vaporization for Benign Prostatic Hyperplasia: A Prospective Study

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Introduction and Objective: To evaluate the initial experience and outcome of photo-selective vaporization of the prostate (PVP) for benign prostatic hyperplasia (BPH) in Pakistan with the use of a 980 nm diode laser.

UP.137, Table 1.

Patients Characteristics	Mean ± Standard deviation
Age (yrs.)	65 .82 ± 10.42
Preoperative Qmax (mL/s)	6.13 ± 1.44
Preoperative PVR	131.69 ± 82.35
Preoperative IPSS	25.96 ± 3.58
PSA (ng/mL)	2.19 ± 0.93
Irrigation Fluid	16.44 ± 4.66
Prostate volume (g)	67.35 ± 16.42
Operation time (min)	55.85 ± 18.01
Applied Energy (kJ)	198.68 ± 49.12
Catheterization time (hr.)	43.14 ± 7.26

UP.137, Table 2.

Patients Characteristics	
Blood Transfusion	7%
TUR Syndrome	0%
Clot Retention	9%
Stress Incontinence	14%
Hematuria	10%
Urinary Tract Infection	11%
Conversion to TURP	9%
Failed TWOC	0%
Urethral Stricture	0%
Bladder Neck Contracture	0%
Terminal Dysuria	29%
Burning Micturition	35%
Re-Catheterization	0%

Materials and Methods: A prospective study was performed from November 2015 to December 2016. Total 100 patients diagnosed with bladder outlet obstruction secondary to BPH who planned for PVP were enrolled in the study. PVP was performed by a single surgeon. Prostate vaporization was carried out with a diode laser at 980 nm (Biolitec Diode 180W Laser) in a continuous wave mode with a 600 nm (twister) fiber. Baseline characteristics of the patients and perioperative data were compared. Postoperative outcomes were evaluated by International Prostate Symptom Score (IPSS), Post void residual (PVR) and uroflowmetry (UFM) at 3 and 6 months after surgery.

UP.137, Table 3.

Parameters		Pre-operative	Post-operative	p-value
Sodium (Na)		141.60 ± 3.15	140.52 ± 3.31	0.053
Potassium (K)		4.05 ± 0.39	3.72 ± 0.45	0.059
Creatinine (Cr)		1.08 ± 0.29	0.988 ± 0.32	0.215
Hemoglobin (Hb)		12.88 ± 1.34	11.87 ± 1.52	0.092
Parameter		**Pre-operative Hemoglobin**	**Post-operative Hemoglobin**	**p-value**
History of Anti-coagulant	No (n = 76)	12.93 ± 1.41	11.96 ± 1.50	0.966
	Yes (n = 24)	12.73 ± 1.10	11.57 ± 1.57	0.312

Continuous variables are presented as Mean ± Standard deviation and Paired samples t-test is applied.

UP.137, Table 4.

Parameters	Pre-operative (n = 100)	3 Months (n = 100)	Mean Difference	p-value	6 Months (n = 100)	Mean Difference	p-value
Qmax (mL/s)	6.13 ± 1.44	18.22 ± 4.78	-12.09	< 0.001*	19.22 ± 4.75	-13.09	< 0.001**
Post void Residual	131.69 ± 42.35	22.12 ± 8.71	89.34	< 0.001*	18.89 ± 5.39	112.8	< 0.001**
IPSS	25.96 ± 3.58	7.13 ± 1.76	18.33	< 0.001*	7.04 ± 1.69	18.92	< 0.001**

Continuous variables are presented as Mean ± Standard deviation. IPSS: International Prostate Symptom Score, Qmax: Maximum Urinary flow rate.

*Significant Comparison of Pre-operative VS 3 Months and p-value is calculated by Paired t-test.

**Significant Comparison of Pre-operative VS 6 Months and p-value is calculated by Paired t-test.

Results: The mean age was 65 .82 ±10.42, a mean prostate size was 67.35 ±16.42, operative time was 55.85 ±18.01 and total energy was 198.68 ±49Kj. At 3 & 6 month, significant improvements were noted (<0.001) in IPSS 7.04±1.69 (-18.9), Qmax 19.2 ±4.7 ml/sec (+13.0) and and PVR 18.8 ± 5.3ml (-112.8). Most frequent problems were burning micturition (35%) and terminal dysuria (29%). Only Nine patients were converted to TURP. No significant difference in post-operative hemoglobin seen in patients who were on antiplatelet drugs.

Conclusion: PVP with a diode laser is as safe and effective procedure for the treatment of BPH, is also safe in patient who are on anti-platelet agents.

UP.138

Photoselective Vaporization of the Prostate as Treatment Option for Benign Prostatic Obstruction

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Introduction and Objective: We review patient characteristics and outcomes after photoselective prostate vaporization of the prostate (PVP) using a 532 nm 120 W lithium triborate laser (GreenLight HPS, American Medical Systems, Minnentonka, USA).

Materials and Methods: We performed retrospective review of medical records from inpatient and outpatient data of patients who underwent photoselective vaporization of the prostate (PVP) between 2012 and 2014. We recorded patient characteristics, operative details and postoperative data. Values are reported mean +/- standard deviation unless otherwise stated.

Results: Between 2012 and 2014, a total of 69 patients underwent PVP. Patient age is 69.6 +/- 7.4 years (range 56-87). Comorbidities present were 20% with diabetes mellitus and 15% with cardiovascular conditions (high blood pressure, coronary heart disease, or arryhtmia). Urinary retention was the presenting symptom in 40.6% of patients, while lower urinary tract symptoms were present in the remainder. Operative time was 105.8 +/- 42.8 minutes, lasing time 53.7 +/- 29.9 minutes. Prostate volume was 68.4 +/- 31.5 ml and was correlated with lasing time (r=0.4272, p=0.02). No significant hemorrhage during operation was noted in 90% of patients, with hemorrhage estimated 25-600 cc (median 200 cc) in the rest. Patients were admitted for a mean of 6.4 days, with a range from 2-16 days. 65% of patients did not need bladder irrigation at the end of procedure. Nine patients were discharged with a transurethral catheter, four of which presented preoperatively with urinary retention. Median duration of postoperative urethral catheterization is 3 days. Median follow up was 7 months. Preoperative peak flow rate was 9.9 +/- 5.0 ml/min and postoperative was 17.2 +/- 10.6 ml/min. Preoperative post void residual urine was 111.0 +/- 146.3 ml and postoperative residual was 59.0 +/- 54.2 ml.

Conclusion: PVP is a treatment option for relief of prostatic obstruction. Benefits include limited risk of hemorrhage, bladder irrigation, and use of isotonic peroperative bladder solution which possibly allows for a wider spectrum of patient risk. Advantages should be balanced against limited outcomes data and increased resource utilization.

UP.139

Relationship between Secondary Diagnoses and Clinical Results after Male Re-Adjustable Sling Implantation for Post-Prostatectomy Incontinence

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Introduction and Objective: Given that the inflammatory reaction is an important step in synthetic sling incorporation after stress urinary incontinence surgery, even in post-prostatectomy incontinence (PPI), we aimed to study the effect of chronic inflammatory or autoimmune disorders in the results after implantation of an adjustable male sling.

Materials and Methods: Retrospective study of 92 men who underwent implantation of an adjustable male sling (REMEEX®, Neomedic, Spain) due to PPI. The sample was divided into 3 groups: Group A (n=60): patients who were totally continent after surgery; Group B (n=20): patients who were partially continent and needed readjustment; Group C (n=12): patients who were incontinent after surgery. Variables investigated: age, secondary diagnoses with special interest in autoimmune or chronic inflammatory disorders, physical examination, complementary studies and ICIQ-SF questionnaire. Statistical analysis: descriptive statistics, ANOVA, Student's t-test, Fisher's exact test. p<0.05 was considered statistically significant.

Results: Age was similar in the three groups as shown in figure 1 (average 69.02 years, range 56-82). Complete continence was achieved in 65.21% of the patients. Table 1 shows the distribution of the most important secondary diagnoses in the three groups.

Conclusions: Male re-adjustable sling REMEEX® achieves a 61.25% of continence in post-prostatectomy incontinence. A medical background with inflammation and immune disorders is more frequently found in patients with a worse response to treatment.

UP.140

Efficacy and Safety of Tadalafil Daily in the Treatment of Lower Urinary Tract Symptoms Associated with Benign Prostatic Hyperplasia in Men Aged ≥75 Years

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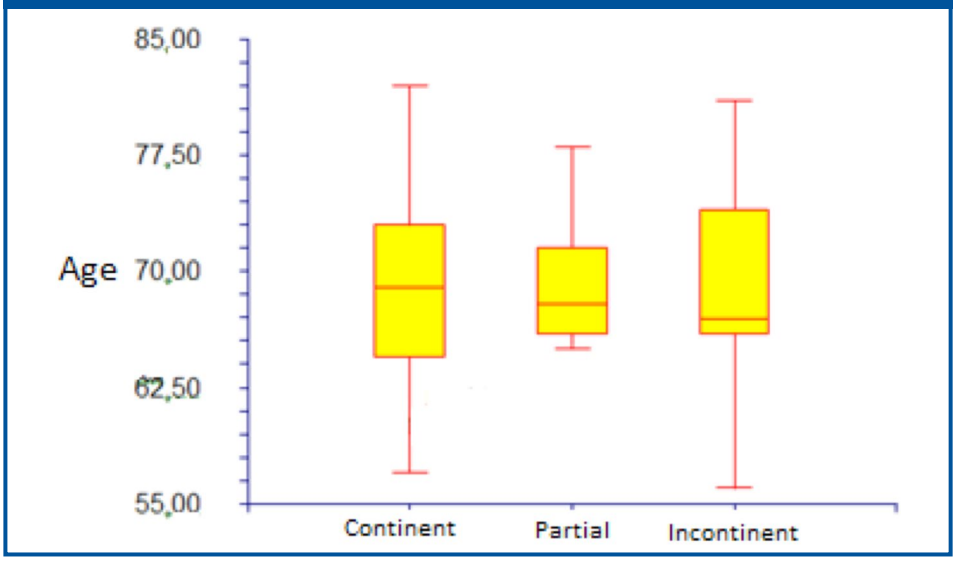
UP.139, Figure 1.



UP.139, Table 1.

Secondary diagnoses	Continent n=60	Partially Continent n=20	Incontinent n=12	p (comparing continent and incontinent)
Diabetes	6	6	6	0.0033
-Type 1	2	2	3	0.0300
-Type 2	4	4	3	0.0853
Inflammatory bowel disease	-	-	2	0.0258
Rheumatic diseases	-	-	2	0.0258
Osteoarthritis	6	-	6	0.0033
Allergies	4	-	3	0.0853

Introduction and Objective: We evaluated the efficacy and safety of tadalafil in medically complex vulnerable elderly patients with lower urinary tract symptoms associated with benign prostatic hyperplasia.

Materials and Methods: In this 12-week, patients were community dwelling men 75 years old or older. Patients with BPH had scores of less 3 or more on the VES-13 by NCCN (Vulnerable Elders Survey). We evaluated the changes of each parameter before and 4 to 12 weeks after the administration of tadalafil 5 mg per day. The overactive bladder symptoms score (OABSS), IPSS were used as a subjective questionnaire for overactive bladder symptoms. We compare between vulnerable elderly group and no- vulnerable elderly groups.Statistical comparisons before and after the administration were made using the Wilcoxon signed-rank test. To examine the relation between OABSS and IPSS, Spearmans testing was used for correlations between independent variables and P<.05 was considered statistically significant. Safety evaluations included self-reported symptoms and post-void residual volume.

Results: A total of 48 patients were enrolled (mean age74.8 years, 53.4% age 75 years or greater). The vulnerable elderly patients had high rates of comorbidities, polypharmacy and functional impairment. At week 12 the both group had insignificantly greater improvements in OABSS (p=0.34) and IPSS (p=0.18) Adverse effects were generally similar.

Conclusion: Tadalafil improved lower urinary tract symptoms not in no-vulnerable elderly patients, but also in vulnerable elderly patients.

UP.141

Clinical Factors Influencing Postoperative Urinary Retention after Lower Limb Arthroplasty

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Introduction and Objectives: Acute postoperative urinary retention (POUR) is a common surgical complication. The estimated incidence of POUR after general surgery is 2.1% to 36.6%; the reported incidence after lower limb arthroplasty is 20 times higher than that after other procedures. The aim of the present study was to evaluate the incidence and predictive factors of POUR after lower limb arthroplasty.

Materials and Methods: Between January 2013 and July 2014, 226 consecutive patients (mean age 72.2 ± 12.5 years; 190 females [84.1%]) who underwent hip or knee arthroplasty performed by a single surgeon at our institution were enrolled in this study. POUR was defined as clinical evidence of a distended bladder with inability to void or incomplete bladder emptying despite a desire to void, accompanied by bladder pain or discomfort persisting at least 4 hours after urinary catheter removal.

Results: Sixty-two (27.4%) of the 226 patients were diagnosed with POUR. A significantly higher incidence of POUR was found among patients with older age or low body mass index among those who underwent hip surgery or general anesthesia, and among those who received a higher rate of fluid administration or transfusion. Multivariate analysis revealed that age ≥ 75 years and intraoperative fluid infusion ≥ 12 mL/min were independent risk factors for POUR. The optimal cutoff value for age as a predictor of POUR was 75 years (area under the receiver operating characteristic curve = 0.764).

Conclusions: The incidence of POUR in the present study was 27.4%. Older age and intraoperative volume overload were identified as independent risk factors for the occurrence of POUR. Our data suggest that the age cutoff to predict the risk of POUR is 75 years. To prevent POUR after lower limb arthroplasty, the administration rate of intraoperative intravenous fluid, especially in older patients, should be closely monitored to avoid excessive fluid accumulation during surgery.

UP.142

The Effects of Enhanced External Counter-Pulsation (EECP) Device on Urinary Symptoms and Sexual Function of Patients with Benign Prostatic Hyperplasia: A Pilot Study

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Introduction and Objective: According to multiple studies, vascular damage and associated chronic ischemia may have a role in developing urinary symptoms and sexual difficulties in patients with benign prostatic hyperplasia (BPH). Among different modalities used for improving systemic blood circulation and treating associated complications (especially in patients with angina pectoris and cardiac failure) is the Enhanced External Counter-Pulsation (EECP) device. This study was designed to evaluate the effects of EECP on urinary symptoms and sexual function of BPH patients with a history of cardiac ischemia.

Materials and Methods: Twelve BPH patients with at least moderate levels of Lower Urinary Tract Symptoms (LUTS) (IPSS>9) for a minimum of one month who had a history of cardiac problems were included in this clinical trial (before-after study). All participants underwent EECP (VAMED) for 35 sessions (one-hour sessions, 5 days a week for 7 weeks) in addition to standard BPH medical treatment. They were evaluated before and after treatment using IPSS and IIEF-5 scoring system. Post-voiding residue (PVR) and maximal urine flow rate (Q-max) were also measured. Quantitative variables were compared using Anova test and qualitative variables were compared with Chi square and Friedman tests.

Results: Of 12 patients who were included in this trial, nine completed the follow up. The mean IPSS was 15.78±7.9 at the beginning and 13.67±7.1 at the end of the study (p=0.1). The mean PVR was 35.33±21.7 before and 31.11±20.3 (p=0.8) after the procedure. This lack of statistically significant difference was also seen in the mean IIEF (9.89±3.6 before and 11.56±6.3 after, p=0.2) and mean Q-max (10.3±4.7 before and 14.7±6.1 after the study, p=0.1). The only significant difference was seen in the mean Quality of Life (QOL) rank which was 1.6 at the beginning and 2.5 at the end of the study (p=0.01).

Conclusion: Our experiment demonstrated that application of EECP as an adjuant treatment may be beneficial in cardiac patients with lower urinary tract symptoms; however, conducting complementary studies with larger sample sizes and comparison with control groups are necessary.

UP.143

Efficacy of Tadalafil in Treating Urinary Symptoms in Patients with Varying Severity of Atherosclerosis

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Introduction and Objective: The prevalence of benign prostatic hyperplasia (BPH) and its associated urinary symptoms increases with advancing age, as do cardiac and atherosclerotic problems. Vascular perfusion of the lower urinary tract can effect the performance of a-blocker medications which are the standard treatment in BPH patients. Adding Phosphodiesterase Enzyme Type 5 Inhibitors (PDEI5) to a-blockers, as a mean to increase pelvic organs perfusion has shown to increase the efficacy of a-blockers. However, the effect of PDEI5s as a sole treatment in atherosclerotic patients with urinary symptoms has not been studied before. In this trial we studied the effect of Tadalafil (PDEI5) in BPH patients with atherosclerosis.

Materials and Methods: In this clinical trial, male patients with urinary symptoms attributable to BPH were assigned into two groups of high and low to moderate-risk coronary artery disease, based on Framingham criteria. Patients in each group were matched for age and other confounding variables and prescribed Tadalafil 5 mg daily for 12 weeks. Urinary Severity Symptom Score (IPSS) and its related quality of life, Post Void Residual volume (PVR) and Urinary max flow rate (Q-max) were measured before and during treatment at 4, 8 and 12 weeks.

Results: Eighty-two patients enrolled in this study (50 high-risk and 32 low to moderate risk). Mean age was 57.3 ± 5.6 and 63.5 ± 6.7 years (P< 0.0001), in low and high risk group, respectively. Comparing IPSS scores reveals a gradual improvement through the end of treatment in both groups, however, the difference was not significant; first IPSS: (17.3±3.5 in low risk and 18±4.8 in high risk group, P=0.9), last IPSS: (12.6±3.4 in low risk and 12.8±2.9 in high risk group, P=0.4). Improvement in other parametres was also seen overtime but without significant difference in the 2 groups.

Conclusion: Although prescribing Tadalafil improved our parameters, it didn't result in any significant difference between them in 2 groups of atherosclerosis severity. This may indicate that the severity of perfusion impairment induced by atherosclerosis overcomes the dilatory effect of PDEI5 medication.

UP.144

Efficacy and Safety of Silodosin in the Treatment of Lower Urinary Tract Symptom in Elderly Men Taking Anti-Hypertensive Medications

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Introduction and Objectives: Both hypertension and lower urinary tract symptom (LUTS) are common conditions in the elderly population. This study investigated the efficacy and safety of silodosin in the treatment of LUTS in elderly men who were taking anti-hypertensive medications.

Materials and Methods: This is an observational study which collected the medical records of patients who started silodosin medication for their LUTS between April 2015 and December 2015. Inclusion criteria were age ≥65 years, currently taking anti-hypertensive medication, and International Prostate Symptom Score (IPSS) ≥8. Pre-treatment evaluation included IPSS, Male Sexual Health Questionnaire, systemic symptoms, blood pressures, and uroflowmetry. Post-treatment evaluation was performed 3 months after the initial administration of silodosin medication.

Results: Mean age of the total 48 patients was 70.7±5.2 years. Thirty-two (66.7%) patients who continued silodosin single treatment showed a significant decrease in IPSS scores (4.2±1.1 vs. 3.0±1.6, p=0.001) and an increase in the maximum flow rate (10.7±6.0 ml/sec vs. 14.0±4.5 ml/sec, p=0.001). Blood pressures did not change, and none of the patients needed to adjust their anti-hypertensive medication. New development of orthostatic hypotension was observed in one (2.5%) patient. Among the six patients who had orthostatic hypotension before silodosin treatment, none of the patients showed symptom aggravation. Ejaculatory dysfunction that required discontinuation of silodosin medication developed in only one (2.5%) patient.

Conclusion: Silodosin is an effective and safe agent in elderly men who are taking anti-hypertensive medications. Silodosin has an advantage in the treatment of LUTS in this population, even if the patients have orthostatic hypotension before treatment.

UP.145

The Predictive Factors for Efficacy of Initial Combination Therapy of Alpha Blocker Plus Anticholinergic Agent in Men with Benign Prostatic Hyperplasia and Overactive Bladder

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Introduction and Objective: In men, overactive bladder (OAB) symptoms may coexist with bladder outlet obstruction due to benign prostatic hyperplasia (BPH). Recent studies showed the safety and efficacy of anticholinergics in men with lower urinary tract symptoms (LUTS). We evaluated the efficacy of combination therapy using alpha blocker plus anticholinergic in initial treatment of both BPH and OAB, and the predictive factors were investigated.

Materials and Methods: This study enrolled 195 patients with both BPH and OAB who were treated with alpha blocker (tamsulosin or alfuzosin) and anticholinergic (solifenacin) as an initial therapy. Inclusion criteria were: male, age 50 years or older, total International Prostate Symptom Score (IPSS) of 12 or higher, prostate volume of over 20cc and IPSS urgency score of 2 or higher for OAB. We measured the treatment efficacy, the clinical parameters and we examined the IPSS, the quality of life (QoL) score, three days of the voiding diaries, uroflowmetry and post-voiding residual (PVR) volume at baseline and after 12 weeks of treatment. The patients were divided into responders (including 'very satisfied' and 'somewhat satisfied') and non-responders on the Treatment Satisfaction Question.

Results: Overall, 31 patients were lost to follow-up and dropped out, and the remaining 164 patients were followed up for 12 weeks after treatment. The mean IPSS, QoL score, micturitions per 24 hours, voided volume and peak flow rate were significantly improved after treatment ($p<0.05$). PVR volume increased slightly (from 39cc at baseline to 51cc at week 12) but not statistically or clinically significant ($p=0.31$). 125 patients (76%) were responders and 39 patients were non-responders. The prostate volume and initial voiding symptom score of the responders was significantly lower than that of the non-responders (30cc vs 37cc, p=0.02), (6.2 vs 9.9, p=0.04) and Qmax of the responders were higher than those of the non-responders (13.2ml/s vs 9.8ml/s, p=0.02). The most commonly reported adverse events were dry mouth (18%), constipation (6%) and dizziness (2%).

Conclusion: Initial combination therapy of alpha blocker plus anticholinergic agent in men with BPH and OAB may be effective therapeutic option. Predictive baseline parameters for a good response were a smaller prostate volume, higher Qmax and lower voiding symptom score.

UP.146

Evaluation of Efficacy of Silodosin in Lower Urinary Tract Symptoms Due to Benign Prostatic Hyperplasia in Non-Responder to First Alpha-Blocker Treatment: About 34 Patients

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Introduction and Objective: To evaluate the effect of silodosin (8 mg, once a day for 12 weeks) on benign prostatic obstruction (BPO) and lower urinary tract symptoms (LUTS) in men with benign prostatic hyperplasia (BPH) and non-responder to first treatment with selective alpha 1-blocker.

Materials and Methods: Patients, non-responder to alpha 1-blocker (reporting IPSS improvement of less than 2 points under alfuzosin or tamsulosin during 8 weeks period), were enrolled. IPSS, suprapubic ultrasonography and uroflowmetry with post-void residual (PVR) urine volume were investigated. After 4 weeks of alpha-blocker medication, patients were reevaluated and divided into two groups. Treatment success was defined as an improvement in IPSS of 5 points or more; the non-responders are patients who reported improvement of less than 5 points or when developed acute urinary retention or those who demand surgical treatment. The primary outcome measure was a change in the IPSS, and the secondary outcome measures were changes in individual subjective symptom scores, quality of life score (QLS), and peak flow rate (Qmax) and PVR from baseline. The treatment response was monitored at 4, 8, and 12 weeks. Clinical parameters were compared before and after treatment.

Results: Thirty-four patients were included in the study. The average age of the patients was 68.2 ± 9.1 (57-83) years. The prostate volume was 46.8±11.6 ml. The average treatment period with initial alpha-blocker was 4.6 ± 3.3 (2-10) months. They were under alfuzosin (n=6) or tamsulosin (n=28). Evolutionary data are reported in table I. At the end of the study, only 9 patients (26.5%) demand surgery.

Conclusion: Silodosin showed significant efficacy in improvement in LUTS/BPH patients, non-responders to alpha-blocker, with good tolerability and minimum adverse effects. Silodosin may be indicated in non-responder to first alpha-blocker treatment.

UP.146, Table 1. Evolutionary Data in Patients under Silodosin

	Baseline	4 w	8 w	12 w	p
IPSS improvement	-	15	17	21	<0.001
QLS improvement	-	13	15	19	<0.001
Q max > 10 ml/s	17	21	24	28	0.005
PVR < 50 ml	16	15	18	23	0.086
Demand of surgery	1	0	2	9	-
Ejaculatory disorder	5	7	11	15	0.008

W: week

UP.147

The Effects of Flexible-Dose Tamsulosin on Lower Urinary Tract Symptoms and Treatment Satisfaction in Patients with Benign Prostatic Hyperplasia: 12-Week, Open-Label, Observational Study

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Introduction and Objectives: Effects of alpha-blockers for lower urinary tract symptoms (LUTS) are the proportionate relationship to the dosage of alpha-blockers. We investigated the effects of flexible-dose tamsulosin on LUTS and treatment satisfaction in patients with benign prostatic hyperplasia (BPH).

Materials and Methods: Patients aged ≥ 50 years who had International Prostate Symptom Score (IPSS) of ≥ 8 and maximum uroflow rate of ≤ 15 mL/s were enrolled prospectively. Those with neurogenic bladder, histories of acute urinary retention or prostate surgery, anatomical lower urinary tract abnormalities beyond BPH and symptomatic urinary tract infections were excluded. Enrolled patients received tamsulosin 0.2mg/d for the first 4 weeks and divided into two groups by IPSS or treatment satisfaction questions (TSQ). Tamsulosin 0.2mg group was maintained starting dose and tamsulosin 0.4mg group was increased 0.4mg for the remaining 8 weeks. Patients with a reduction of IPSS ≤ 3 or dissatisfaction in TSQ after tamsulosin 0.2mg treatment for 4 weeks were decided to receive tamsulosin 0.4mg. The primary endpoint of this study was to assess the change in total IPSS and treatment satisfaction by flexible-dose tamsulosin at week 12. Secondary endpoints included the proportion of patients with escalation of tamsulosin dose from 0.2mg to 0.4mg, changes of IPSS quality of life (QoL) score, storage subscore and voiding subscore by flexible-dose tamsulosin, change of total IPSS in tamsulosin 0.4mg group, comparison of total IPSS at week 12 between tamsulosin 0.2mg group and 0.4mg group, and baseline factors affecting 0.4mg dose escalation. Safety assessments included adverse events.

Results: One hundred and twenty one patients were enrolled and received tamsulosin 0.2mg. Ninety five patients completed the study, 52 (54.7%) in tamsulosin 0.2mg group and 43 (45.3%) in tamsulosin 0.4mg group. Total IPSS was significantly improved by flexible-dose tamsulosin in this study ($P < 0.001$). Satisfaction rate on 12 weeks flexible-dose tamsulosin treatment was 59% and dissatisfaction rate was 27.3%. IPSS QoL score, voiding subscore, and storage subscore were significantly improved by flexible-dose tamsulosin too. Total IPSS after 0.4mg dose escalation was significantly improved compared to IPSS before dose escalation in tamsulosin 0.4mg group. However, total IPSS changes from baseline to week 12 in tamsulosin 0.4mg group were lower than in 0.2mg group. Maximum uroflow rate was an independent factor affecting tamsulosin 0.4mg dose escalation. Most adverse events were mild, and none were severe.

Conclusion: Flexible-dose tamsulosin treatment in patients with BPH successfully improved LUTS, satisfaction rates and well tolerated.

UP.148

Is Chronic Prostatitis Really Common Disease?

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Introduction and Objective: Chronic prostatitis seemed to be very often urological diagnosis, but is it always exactly prostatitis? The purpose of this study was to estimate a spectrum of urological out-patients in different Clinics of Siberia, Russian Federation.

Materials and Methods: We have analyzed history cases of all out-patients, who have addressed to the urologists in private clinic in Novokuznetsk, in municipal clinic in Novosibirsk, and in private medical center in Novosibirsk in 2013.

Results: In 2013 total of 8368 urological out-patients were admitted in these 3 clinics. Among them 3459 (41.3%) had different infections – from balanoposthitis to pyelonephritis. In municipal clinic patients with chronic prostatitis were of total 2.5% (5.8% among all urogenital infections). In private clinics the share of chronic prostatitis rose to 11.5 – 17.7% (37.1% - 42.3% among all urogenital tract infections).

Conclusion: Without belittling the importance of chronic prostatitis, we would like to estimate this diagnosis as speculative in some cases. Patients with diagnosis chronic prostatitis are suitable for commercial medicine and unsuitable for municipal clinic. We believe multicenter study for evaluation of epidemiology of prostatitis is necessary.

UP.149

The Influence of Positioning in Urination

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Introduction and Objective: Uroflowmetry is frequently used and simple urodynamic test, but it may be affected by various factors, for example by voiding position – both in men and women. We compared the uroflowmetric parameters depending on sitting or standing positions during urination in men and women.

Materials and Methods: On open prospective randomize study 72 men and 9 women were enrolled. All patients underwent an uroflowmetry in standing and sitting position; Mean maximum flow rate (Qmax), mean average flow rate (Qave), and duration of urination (t) were estimated.

Results: In men Qmax in standing position was on average 18.1±6.2 ml/s (6 – 53 ml/s); Qave was on average 10.2±2.7 ml/s (2.7 – 29.6 ml/s). Duration of urination in standing position varied from 11 till 120 sec (on average – 30.5 sec). Qmax in sitting position was on average 17.3±3.5 ml/s (5.4 – 48.0 ml/s), and Qave – 10.6±2.9 ml/s (2.7 – 30.5 ml/s). Duration of urination in sitting position varied from 10 till 109 sec (on average – 28.7 sec). In men, Qmax in sitting position increased on ≥1 ml/s in 34.7% men, Qave – in 40.3%. In women Qmax in standing position was on average 30.2±4.2 ml/s (10.0 – 53 ml/s), Qave – 13.2±1.8 ml/s (6 - 21 ml/s). Qmax in sitting position was on average 27.2±3.1 ml/s (13.0 – 48.0 ml/s), Qave in sitting position was on average 15.7±1.2 ml/s (9 – 27 ml/s). Duration of urination in standing position was on average 25.1 sec (9 – 41 sec), and in sitting position – 22.8 sec (9 – 53 sec). Qmax in sitting position increased on ≥1 ml/s in y 55.6% of women, Qave – in 44.4%.

Conclusion: The quantity of urination may be affected by various factors. It is necessary to repeat uroflowmetry both in sitting and standing position to find optimal position for the patient.

UP.150

Post-Void Residual Urine Volume before Discontinuation of Dutasteride May Be a Predictive Factor for Restarting Medication

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Introduction and Objective: The results of the symptom management after reducing therapy study suggest that after reduction, monotherapy using an alpha blocker may be feasible. However, withdrawal of dutasteride is not fully understood. The aim of this study was to identify predicting factors for the restarting medication after discontinuation of dutasteride.

Materials and Methods: Between September 2010 and December 2015, 30 patients in who were treated with dutasteride by the diagnosis of benign prostatic hypertrophy and discontinued dutasteride were included in this retrospective study. In the groups of restarting and discontinuing dutasteride, patient's age, body mass index (BMI), International Prostate Symptom Score (IPSS), QOL score, Overactive Bladder Symptom Score (OABSS), the duration of medication, prostate volume, the reduction rate of prostate volume, post-void residual urine volume (PVR) using transabdominal ultrasound, concomitant medication and comorbidities were evaluated. Although patients were followed for 12 months after cessation, patients were allowed to restart dutasteride during the follow-up period by their desire. Statistical analysis was carried out to identify clinical covariates significantly between restarting group and discontinuing group.

Results: Six patients (6/30, 20%) restarted dutasteride for up to 12 months. Mean PVR before discontinuation of dutasteride was 79 ml (range 24 to 218) in the restarting group and 34ml (range 0 to 130) in the discontinuing group, respectively ($p=0.0205$). Mean duration of medication before discontinuation of dutasteride was 40 months (range 17 to 63) in the restarting group and 24 months (range 5 to 62) in the discontinuing group, respectively ($p=0.0382$). No significant differences in the patient characteristics were observed between restarting group and discontinuing group in other factors.

Conclusions: This study indicated that PVR and the duration of medication before discontinuation of dutasteride were predictive factors for restarting dutasteride. Our present finding suggested that the possibility of the discontinuation or intermittent

medication of dutasteride was considered in the elderly patients administered with many kinds of medicine.

UP.151

Feasibility Study of a Trial of a Web-Based Self-Management Program for Lower Urinary Tract Symptoms (LUTS)

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Introduction and Objective: We adapted the Emberton model of self-management of LUTS for a web-based delivery in place of the traditional classroom-based model. This pilot study was done to identify the characteristics of men most likely to enroll in a study of its efficacy.

Materials and Methods: We identified a sample of men ages 45 through 74 years of age enrolled in the Kaiser Permanente Southern California health plan who did not have a history of prostate cancer or surgical treatment for benign prostatic hyperplasia (BPH). Random samples of men with no prior diagnosis of BPH (n=2990), a diagnosis of BPH with no other treatment (n=779), or men with a diagnosis and history of treatment by medication only (n=794) were emailed a screening questionnaire that included the International Prostate Symptom Score. Men who reported moderate symptom severity (IPSS 8-19) were asked to provide informed consent for enrollment in the study.

Results: Initial participation rates for the screening questionnaire were greatest among men who had prior medical treatment n=70 (9%). Those with a BPH diagnosis only n=54(7%) and those who had no history of BPH n=109 (4%) were lower. By contrast, among eligible men, participation rates were comparable across the three groups: 23/38 (61%); 13/20 (65%); 29/44 (66%), respectively. Enrolled participants in the BPH naive group were more likely to be younger and have less comorbidity (Table); whereas enrolled participants with a prior BPH diagnosis were more likely to be older with more comorbidity.

Conclusion: These data demonstrate the ability to recruit men into a randomized trial of a web-based self-management program for LUTS. Men with prior experience with LUTS medications were much more likely to participate and while there were some differences between participants and non-participants, men with a variety of demographic and clinical characteristics would be included.

UP.152

Comparison of Uroflowmetric Parameters Depending on Voiding Position

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Introduction and Objective: Uroflowmetry and simple non-invasive test, useful for a diagnosis of many diseases. However, uroflowmetric parameters may depend on various factors, including voiding position. We tried to compare the uroflowmetric parameters in sitting and standing positions during urination.

Materials and Methods: A total of 81 patients were enrolled to the study (72 male and 9 female). All patients underwent an uroflowmetry in both standing and sitting position. The maximum flow rate (Qmax), average flow rate (Qave), and voiding time (VT) values were compared between the two different voiding positions separately in male and female patients.

Results: The mean Qmax values for the standing and sitting positions in the male patient group were 18.1 ± 2.03 and 17,3 ± 1.55 ml/s, respectively and the mean Qave values were 10,2 ± 2.25 and 10,6 ± 1.31 ml/s, respectively. The mean VT in standing positions was 30.5 s, and in sitting position – 28.7. Qmax in sitting position increased on ≥1 ml/s in 34.7% men, Qave – in 40.3%. The mean Qmax values for the standing and sitting positions in the female patient group were 30.2 ± 0.93 and 27.2 ± 1.05 ml/s, respectively and the mean Qave values were 13.2 ± 0.85 and 15.7 ± 0.24 ml/s, respectively. The mean VT in standing positions was 25.1 s, and in sitting position – 22.8. Qmax in sitting position increased on ≥1 ml/s in 55.6% women, Qave – in 44.4%.

Conclusion: Uroflowmetric parameters depend on various factors, including voiding position, so uroflowmetry should be repeated in both positions. The patient should be advised to urinate in position with better uroflowmetric results. Every third male patient has both maximum and average flow rate better in sitting position.

UP.151, Table 1.

	Participation among eligible men, by BPH history category								
	No diagnosis/ treatment history			History of diagnosis but no treatment			History of diagnosis and medical treatment		
	Participant	Non-participant	Part. rate (%)	Participant	Non-participant	Part. rate (%)	Participant	Non-participant	Part. rate (%)
	29	15	66	13	7	65	23	15	61
Age									
45-64	20	10	67	4	5	44	9	4	69
65-74	9	5	64	9	2	82	14	11	56
Race/Ethnicity									
Black	4	3	57	0	1	0	2	0	100
Hispanic	6	5	55	4	3	57	4	6	40
White	15	5	75	8	2	80	14	8	64
Other	4	2	67	1	1	50	3	1	75
Comorbidity									
0	16	7	70	7	6	54	7	8	47
1	4	3	57	3	1	75	5	3	63
2+	9	5	64	3	0	100	11	4	73
IPSS									
8-12	12	8	60	5	3	63	12	5	71
13-19	17	7	71	8	4	67	11	10	52

UP.153

Comparison of the Effect of Naptopidil and Tamsulosin on the Bladder Storage Symptom with Benign Prostatic Hyperplasia: Prospective, Multi-Institutional Study

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Introduction and Objective: This study was undertaken to compare the efficacies of naftopidil and tamsulosin in terms of reducing storage symptoms in patients with BPH.

Materials and Methods: This prospective randomized study was performed at 10 centers. Ninety-four patients that had been taking tamsulosin for more than 8 weeks, but had an OABSS of greater than 3 points were initially enrolled. After a 1 week washout period, patients were divided into two groups. Forty-five patients were treated with tamsulosin 0.2 mg daily and 49 patients were treated with naftopidil 75 mg daily for 8 weeks, respectively. Total IPSS, storage symptom scores, nocturia times, OABSS, maximal flow rates (Qmax), and post-void residual volumes (PVR) were checked before and after the 8-week treatment period.

Results: Mean patient ages in the tamsulosin and naftopidil groups were 64.8 and 66.0 years, respectively. Baseline characteristics were not significantly different. In tamsulosin group, mean total IPSS fell from 17.3 to 15.1 after the 8-week treated period, and in naftopidil group, mean total IPSS fell from 16.5 to 13.1. Mean storage symptom scores reduced in tamsulosin and naftopidil groups from 7.8 to 6.6 and from 7.4 to 6.1, respectively. Mean nocturia times in naftopidil groups decreased significantly from 2.4 to 1.9, respectively, and mean OABSS reduced from 7.7 to 6.0 and from 7.7 to 6.0, respectively.

Conclusion: Total IPSS, storage symptom scores, nocturia times and OABSS were significantly more reduced by naftopidil and tamsulosin. Moreover, the naftopidil group showed better improvements in nocturia than tamsulosin group.

UP.154

Fascia Lata Harvest Site Morbidity in Pelvic Organ Prolapse Surgery

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Introduction and Objective: There has been increasing concern regarding use of synthetic mesh for pelvic organ prolapse (POP) surgery in recent years. An alternative technique of anterior prolapse repair is using autologous fascia lata as a reinforcement. Although several studies have evaluated this surgery for POP outcomes, there is a sparsity of data regarding harvest site morbidity. This study examines autologous fascia lata harvest site morbidity and complications in the context of POP surgery.

Materials and Methods: A retrospective review of all patients who underwent autologous fascia lata graft for POP surgery at a single institution by a single surgeon, from January 1, 2013 to December 31, 2015, was performed. Outcomes assessed include intraoperative and postoperative complications, as well as pain and functional outcomes.

Results: Fourteen women (mean age 69 years, range 36 to 84 years) underwent autologous fascia lata graft harvest for POP surgery during the study period. Mean follow up was 10.8 months. All surgeries involved transvaginal repair of anterior compartment prolapse (mean cystocele grade 3.6). Two patients had concurrent apical prolapse; and one patient had concurrent posterior prolapse. There were no intraoperative complications during graft harvest. The early postoperative course was complicated by seroma in 14% (2/14) of patients, which resolved spontaneously. One patient developed a harvest site hematoma, which was treated by aspiration. There were no harvest site infections. 36% (5/14) of patients had ongoing harvest site pain at 3 weeks follow up; no pain was chronic beyond 3 months. There were no late complications identified beyond 3 months. No cases of muscle prolapse at the harvest site, restricted range of motion or functional gait disturbance.

Conclusion: Autologous fascia lata graft harvest in POP surgery was completed in all cases without intraoperative complication. Early harvest site complications were of low Clavien-Dindo grade (1 to 2), including pain controlled with oral analgesia, spontaneously-resolving seroma and hematoma treated by aspiration. There were no late complications; no chronic pain, muscle prolapse, restricted range of motion or gait disturbance.

UP.155

Results of Efficiency and Safety in Repairing Previous Prolapso through the Surelift® System: Five Years Results

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Introduction and Objective: The Surelift system is a versatile mesh with 6 anchor points. The present study evaluates its efficacy and safety after a mean follow-up of 5 years.

Materials and Methods: It is a retrospective study conducted between January 2010 and December 2016, a total of 43 women. They were operated through the SURELIFT system (Neomedic Int., Spain). Of these, 27 were operated on anterior wall prolapse and another 16 on apical prolapse. In 44.2% (19/44) a tension free suburethral mesh was also placed. Postoperative regional pain and patient satisfaction were assessed using a questionnaire. In cases that were considered necessary, a urodynamic study was performed at any time of follow-up. Mean age: 68.2 (range 53-81), mean parity: 2.2 (range 1-4), mean BMI: 26.1 ± 1.6. A 41.8% (18 cases) had a urogynecological surgical history (7 anterior colporraphy, 15 hysterectomy and 5 TOT without tension).

Results: After a mean follow-up of 36 months (6-78) a subjective cure of 92.4% and objective (anatomical) of 90.1% was achieved in patients with anterior prolapse. Likewise, in the cases of apical prolapse, subjective and objective cure rates of 80.2 and 77% were obtained. No patient had stress incontinence after the operation. Eight women (18.6%) had to receive parasympatholytics due to urgency incontinence. 39/43 (90.7%) of patients were satisfied or very satisfied with the operation. Complications: postoperative pain 5, dyspareumia 3 and vaginal erosions 2. The Surelift system is a high quality macropore polypropylene mesh with 6 anchoring points. Harpoon anchoring is safe and effective. The possibility of being cut and adapted to the particular anatomy of each patient helps to achieve high elevated rates of clinical and anatomical healing. The existence of 6 fixation points favors this placement and allows, if necessary, trim a pair of said arms to get the correct adaptation to the anatomy of each patient.

Conclusions: The repair of the previous prolapse with the SURELIFT system is effective in terms objectively and subjectively without relapses of the POP and without limited complications.

UP.156

Pregnancy on Obstetrical Vesico-Vaginal Fistula in Oasis Center, University Hospital of Point G / Bamako: About 6 Cases

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Introduction and Objective: To report the case of pregnancy on obstetric VVF.

Materials and Methods: This was a prospective descriptive study concerning patients admitted to the "OASIS"center in the Urology Department of the University Hospital of Point G during the period of October 2015 to March 2016 for obstetric fistula and bearing pregnancy before fistula treatment. All patients were examined and classified according to the classification of our service (K.OUATTARA & Col.) before and after pregnancy. The epidemiological, clinicopathological, treatment and outcome were analyzed on Epi Info 3.5.1 software.

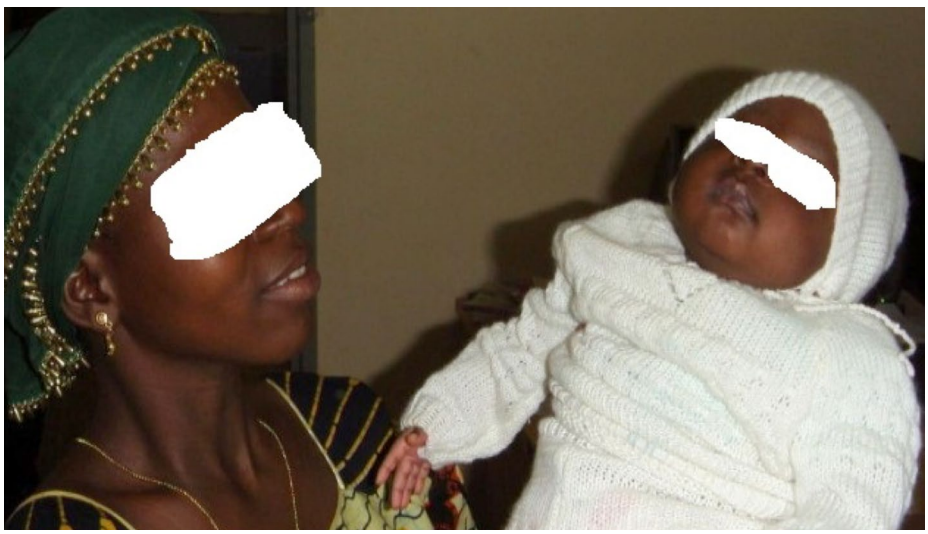
Results: During the study period, six patients were pregnancy among 57 residents at the center "OASIS" means .the age of our patients in pregnancy was 26.66 years, ranging from 21 to 33 years. The age of the fistula was eight months in two patients, between 8 and 12 months in three patients and more than one year in one patient. The author of the pregnancy was the husband in three cases, two cases outside marriage, and if the author is unknown. The anatomical and topographic type of fistula has not changed in any case, it was kind of fistula IIAB (partial avulsion cervical-urethral) in four patients, and type I (vesicovaginal wall in two patients). Cesarean section was performed in all patients of our systematic way in collaboration with the obstetrics and gynecology department.

Conclusion: The occurrence of pregnancy on obstetric fistula is a reality in our regions, whose complications can be devastating if support is not rigorous.

UP.156, Table 1. VVF Classification According to K. Ouattara & Coll

VVF CLASSIFICATION ACCORDING TO K. OUATTARA & COLL	
TYPE	**DESCRIPTION**
I	Fistula vesicovaginal wall
II	Type IIA: Without destruction of the urethra IIAa: Cervico-urethro-vaginal fistula IIAb: with subtotal circumferential defect IIAc: with total circumferential defect ± permeable urethra, blind urethra
	Type II B: With destruction of the urethra
III	Trigonocervical-utero-vaginal fistulas
IV	Complex Fistula (Mixed)
V	High located Fistula (iatrogenic): Vesico-uterine, Vesico-cervico-uterine, uretero-vaginal, Retro-trigonal

UP.156, Figure 1. Fistula Patient after Caesarean Delivery



UP.156, Figure 2. Patient after Fistula Surgery

UP.157

Change in the Aetiological Pattern of Female Urogenital Fistula in Bangladesh

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Introduction and Objective: This prospective study was done on patients undergoing operation for urogenital fistula to review its aetiology which has changed dramatically over the last few decades in Bangladesh.

Materials and Methods: Fifty six cases of urogenital fistula were repaired during January, 2010 to December 2015. Of which 40 (71.42%) cases were post hysterectomy, 4 (7.14%) cases followed caesarean section and 12 (21.42) cases were obstetric following birth trauma. In this series iatrogenic cases constituted 78.56% and birth trauma contributed 21.14 %. Age range of the patients varied widely from 17 years to 53 years. Out of 56 cases only two cases were ureterovaginal fistula (3.57%). Depending on the site, size and relation of the fistula with ureteric orifices 44 (78.42%) cases were operated through transperitoneal route and 12(21.42%) cases through transvaginal route. Four (7.14%) cases needed ureteral re-implantation. In the repair of VVF interpositional tissue flap was invariably used in the form of either greater omentum or Martius flap.

Result: The mean operative period was 1.3 hours ranging from 45 minutes to 1.8 hours. The interval between the occurrence of fistula and its repair ranged from 4 months to 29 years. The mean hospital stay was 6.5 days ranging from 5 to 8 days. Analysis of the aetiology revealed 71.42% cases followed hysterectomy, 21.42% cases followed birth trauma and 7.14% followed caesarean section. The success rate of the series was almost 90%.

Conclusion: The major cause of the female urogenital fistula in Bangladesh was birth trauma due to lack of nationwide effective and efficient maternal care. Due to the improvement in maternal care system from the later part of the last century the contributing factor in the aetiology of female urogenital fistula has shifted drastically from obstetric to iatrogenic.

UP.158

Prognostic Role of Inflammatory Disorders in the Success after Pelvic Floor Surgery

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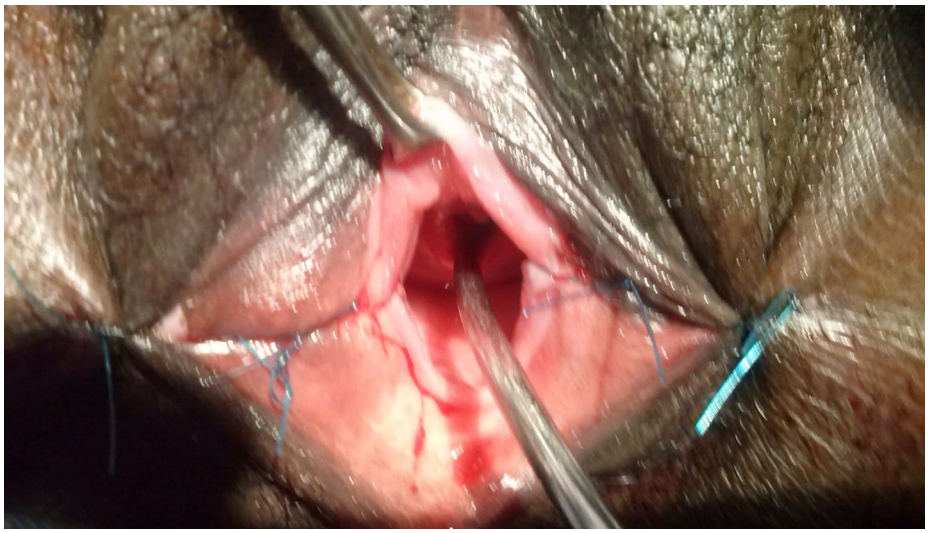
Introduction and Objective: Life expectancy is increasing, and many polymedicated patients are undergoing anti-incontinence surgeries. Given that inflammatory factors are very important in the integration of the synthetic slings with the patient's tissues, we

UP.156, Figure 3. Appearance of a Fistula before Surgery



aimed to know the possible influence of autoimmune or chronic inflammatory disorders in the long-term continence rates after mid-urethral transobturator tapes (TOT).

Materials and Methods: Retrospective study of 950 women with stress urinary incontinence who underwent TOT surgery between April 2003 and June 2016. All surgeries were performed by the same surgeon and with the same tape (Contasure KIM®). The sample was divided in two groups for comparison: Group A (n=807): continent patients after surgery; Group B (n=143): incontinent patients after surgery. Variables investigated: Age, medical and surgical background with special interest in autoimmune and chronic inflammatory disorders, physic examination and complementary studies (urine analysis and culture, ultrasound; cystoscopy, urodynamic studies or cistography/urography when needed), results of the ICIQ-SF and SF-36 questionnaires in one, three and 12 months after surgery, and then yearly, average follow-up time. Statistical analysis: descriptive statystics, ANOVA, Student's t-test, Fisher's exact test. $p<0.05$ was considered statistically significative.

Results: Average age 64.92 years (range 35-88), similar in both groups. Average follow-up time is 110.3 months, range 6 to 156 months. Table 1 shows the percentage of patients affected with autoimmune/chronic inflammatory disorders per group.

Conclusions: A mid-urethral transobturator sling achieves very good continence rates. When stratifying by secondary diagnoses, the presence of a chronic inflammatory disorder, local or systemic, seems to be an independent risk factor for surgical failure. A re-adjustable sling may be a better option than a TOT for this group of patients. It is hypothesized that the material induces an acute inflammatory response, which leads to constructive remodelling and material integration, but when an excessive inflammatory reaction is given, patient's tissues and/or the synthetic material may be damaged, leading to a mechanical failure of native tissue erosion. The results shown in our study may support this theory, having a higher failure rate of the gold standard procedure for stress urinary incontinence in women with autoimmune or chronic inflammatory disorders.

UP.159

Alternative Therapy for Acute Uncomplicated Cystitis in Women

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Introduction and Objective: Acute uncomplicated cystitis in female patients is one of the most frequently diagnosis, which basically is considered as an indication for prescription of antibiotic. As cystitis is often recurrent disease, women take some courses of antibiotics annually. It leads to the selection of resistant strains and increases development of side effects. The purpose was to evaluate the efficiency of non-antibacterial treatment for acute uncomplicated cystitis in female patients.

Materials and Methods: In pilot open non-comparable prospective study 17 women in age of 18 – 28 (22.4 on average) were enrolled. Including criteria were: diagnosis acute uncomplicated cystitis, non-pregnant sexually-active women in reproductive age, using optimal contraception, agreement to participate study; visit to a doctor for 12 hours from the beginning the disease. Excluding criteria were: using condom / spermicide, menopause, intake even one dose of any antibiotic due to any reason during 10 days before study participation; symptoms of pyelonephritis, any complicated factors, duration of the disease more than 12 hours. All patients received unique therapy: non-steroid anti-inflammatory drug ketoprofen (flamax forte) 100 mg once a day for 5 days and canephron 2 tablets thrice a day during one month. Control visits were in 2 days to estimate whether indications for antibiotic developed, in 7 days to estimate the result of the therapy and in 1 and 6 months – to evaluate a frequency of relapses.

Results: In three patients (17.6%) symptoms had no tendency to improvement, so antibiotics were prescribed to them. These patients were excluded in study. The rest 14 patients showed significant improvement and they continued the therapy with flamax and canephron only. In 7 days 12 patients (85.7%) had no dysuria and leucocyturia; it was the reason to consider them as cured. In two patients (14.3%) after 6 days of the therapy insignificant dysuria and leucocyturia were found. All 14 patients continued the intake of canephron to prevent a relapse. A month later, at the end of the reception of canephron, all patients were well-being. In six month none relapse was diagnosed.

Conclusion: Non-antibacterial therapy with non-steroid anti-inflammatory drug in combination with phytodrug canephron was effective for acute uncomplicated cystitis in 82.4%: in 85.7% it shows good results, and in 14.3% 0 moderate results. None relapses there were after this therapy.

UP.160

Sexual Debut as a Base for Sexual Life

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Introduction and Objective: The time and conditions of the beginning of the sexual life are very important for further sexual function both male and female.

Materials and Methods: Overall 2048 patients were enrolled in study: 1280 male urological patients and 768 female gynecological patients. Information on sexual debut and feelings and experiences on this subject was obtained through structured questionnaire.

Results: Men had the first sexual intercourse in age at of 16.2±0.7 years (range 14-22 years). Among women first sexual experience was in 14.5% girls younger 14 and in 56.7% girls of age 14-18 years. The girls considered the main reasons for sexual debut as following: interest, persistence of the partner, desire to please of the partner, pity and love. The girls did not have the desire or orgasm in first sexual experience. They had felt shame and disappointment. In cases when first sexual intercourse was with love, girls have got married their first partner later. All girls and half of boys have never applied contraception. Another 50% of boys used condoms in 54%, and coitus interruptus in 46%. Sexual debut resulted in sexually transmitted diseases in 11.7% girls younger 14 and in 31.2% of teenagers (age 14-18): Trichomonas was revealed in 4.8% and 27.7%, Chlamidia — in 1.4% and 15.7%, Candida — in 3.7% and 25.4% accordingly. Thirty six younger girls had genital injury.

Conclusion: Fortunate sexual debut is a base for sexual health. Too early sexual debut of immature person without sufficient knowledge on sexually transmitted diseases, on anatomy and physiology genitals, without understanding of the responsibility for possible pregnancy, and danger of abortion is not recommended. Reasonable abstinence is preferable.

UP.161

Oral Contraceptives Instead of Condoms Reduce Cystitis Relapse

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Introduction and Objective: The urinary tract is one of the most frequent sites of bacterial infection in hu-

UP.158, Table 1.

Secondary diagnosis	GA n(%)	GB n(%)	p
Rheumatoid arthritis	15(1.85)	28(19.58)	0.0001
Lupus	8(0.99)	18(12.58)	0.0001
Fibromyalgia	11(1.36)	15(10.48)	0.0001
Sjögren's Syndrome	9(1.11)	21(14.68)	0.0001
Radiation cystitis	5(0.61)	35(24.47)	0.0001
Intestitial cystitis	4(0.49)	26(18.18)	0.0001

mans, especially in women, and recurrent cystitis is diagnosed in about half of the patients.

Materials and Method: With purpose to estimate the influence of the method of contraception on a frequency of relapse of bacterial cystitis 89 female patients with recurrent cystitis were enrolled in open prospective comparative study. All these women were in reproductive age (on average of 31.4±2.8), all used condom as contraceptive. These women were divided on 3 groups: 1st group – 26 patients were treated for recurrent cystitis with standard therapy and continue contraception with condom, 2nd group – 31 patients, who after standard therapy changed contraception on oral pills, and 3rd group – 32 patients, who changed contraception on oral pills and took phytotherapy (canephron) for one month and repeated course in 3 months. Follow up was 6 months.

Results: In 1st group relapse in 6 months was in 43.3%, and in 26.9% - twice. In 2nd group relapse was in 25.8%, in 12.9% - twice. Best results were in 3rd group - relapse of cystitis occurred in 15.6% only, and none patient had relapse twice.

Conclusion: Barrier contraception predisposed to recurrent course of cystitis, and oral contraceptives reduced a risk of a relapse twice, additional intake of canephron – in three times.

UP.162

The History of Peyronie's Disease: A Misspelt Disease of a Misshapen Organ

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Introduction and Objective: Francois Gigot de Lapeyronie, despite his fame as the surgeon to King Louis XV, and his importance in the acknowledgement of surgeons in France as doctors, is remembered for his eponymous condition of penile deformity. We present a historical review of Peyronie's disease (previously Induratio Penis Plastica), its early descriptions, postulated aetiology, and occasionally bizarre treatment.

Materials and Methods: A literature review from the Greco-Roman period to the present day was performed using MEDLINE and Google Books.

Results: It is said, that Emperor Heraclius of the Byzantine Era (610-641AD), had a penis so deformed, it caused him to urinate on his face. Borgognoni described "heaviness on erection' due to penile tubercles in 1267, Wilhelm a disease of penile curvature in 1476, and Fallopius a "ram's horn deformity" in 1561. However, in 1743, Lapeyronie's description of a rosary-bead-pattern of induration along the cavernous bodies would change the name of the disease forever (despite its incorrect shortening to Peyronie). The aetiology of Peyronie's disease remains unknown. It is thought to occur due to a wound healing disorder occurring after trauma in predisposed men. However, many previous postulations have existed. Heraclius' unfortunate urination was attributed to numerous incestuous relationships. Others theorised that the frigidity of the post-menopausal partner was the cause, or shockingly that the "annoying" resistance of a partner during forceful penetration was to blame. Lapeyronie associated the disease with venereal infection, but noted that treating one did not treat the other. Peyronie's was so common in wounded soldiers requiring penile transfusion, that a vascular cause was also postulated. Historical treatments include mercury or milk, intralesional injections, and even the suggestion by Lapeyronie himself of bathing in the holy waters of Barèges. Surgical treatments such as plaque excision or repositioning were described as early as the 19th century, before techniques by Nesbit and Lue gained popularity.

Conclusion: We have discussed Peyronie's disease from Byzantine to eponymous description, from unknown aetiology to unknown aetiology, and from divine intervention to current surgical management.

UP.163

History of the Foundation of the Devine Jordan Center for Reconstructive Surgery and Pelvic Health: Lessons Learnt

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Introduction and Objective: Surgical specialties are becoming increasingly subspecialized and in some places, segregated. Nevertheless, anecdotal accounts suggest collaboration between specialties can yield synergistic results. In examining the relationships between urological and plastic surgical specialties, a case study of the history of The Devine Jordan Center for Reconstructive Surgery and Pelvic Health in Virginia USA, will be evaluated.

Materials and Methods: A review of PUBMED literature and historical documents was performed. Historical documents included United States national periodicals, Virginia state periodicals, and records maintained at the Urology of Virginia headquarters. Interviews were conducted with key contemporaries.

Results: The Devine Jordan Center for Reconstructive Surgery and Pelvic Heath as we know it today, developed from a collaborative relationship between a father-son trifecta urological team (Dr. Charles Devine Sr. and sons Dr. Charles Devine Jr. and Dr. Patrick Devine) and plastic surgeon, Dr. Charles Horton. Dr. Charles Devine Jr. (1923-1999) and Dr. Charles Horton (1925-2006), from a hypospadias operation, began to share discussions to critically evaluate existing practices and operate cooperatively to develop surgical techniques, bringing expertise from their multidiscipline backgrounds. Consequently, they pioneered a technique of plaque excision and dermal graft for Peyronie's Disease, and multiple procedures for hypospadias. Various journal articles, books, and both local and national newspapers documented their surgical innovations. In 1992, the Devine (later renamed "Devine Jordan") Center for Reconstructive Surgery and Pelvic Health was founded. It continues to foster multidisciplinary collaboration between urology and plastic surgery in the management of patients. In 1975, the Fellowship in Adult and Pediatric Genitourinary Reconstructive Surgery at Eastern Virginia Medical School was inaugurated, and has since trained 38 fellows. In 1983, with the leadership of Dr. Charles Devine Jr., the Society of Genitourinary Reconstructive Surgeons was established.

Conclusions: The history of the Devine Jordan Center for Reconstructive Surgery and Pelvic Health demonstrates that collaboration between urology and plastic surgery was a cornerstone in the pioneering work of Drs. Charles Devine Jr. and Charles Horton. In this era of increasing surgical subspecialization, may we stay cognizant that fostering collaboration between subspecialties can have advantages to patients and the advancement of surgical therapies.

UP.164

Frederick Foley and the Humble Catheter: An Innovation that Has Stood the Test of Time- From Antiquity to the Development of the Foley Catheterhe Humble Catheter: An Innovation that Has Stood the Test of Time- From Antiquity to the Development of the Foley Catheter

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One cannot fathom a world where the humble catheter doesn't exist. The word catheter is derived from Greek meaning 'to let or send down'.

History dates its use as early as 1500 BC using materials such as bronze tubes, reeds, straw and curled up palm leaves to relieve urinary retention. Later, gold, silver, brass, lead and copper were used. Malleable silver tubes with side holes were subsequently used and Benjamin Franklin used the malleability and presumed antiseptic property of silver to design a catheter for his brother who suffered from urinary retention. Coude-tip catheters entered the field in the 18th/19th century. The advent of rubber vulcanization in 1844 and mass production of durable latex paved the way for the 'Foley' catheter.

Frederic Foley (1891-1966) a Boston Urologist first described the use of a self-retaining balloon catheter in 1929 to achieve haemostasis after cystoscopic prostatectomy. This feature addressed previous problems encountered with external taping/ strapping. He demonstrated his prototype at The American Urologist's Society in 1935, publishing a paper in 1937. CR Bard Company subsequently manufactured the 'Foley' catheter consisting of a rubber balloon attached with fine silk and waterproof cement close to the tip of the rubber catheter with a longitudinal groove to accommodate a fine tube to inflate the balloon with water. Though there is no record of his training in

Urology Frederic Foley was certified by the American Board of Urology in 1937 and later went on to become Chief of Urology at the now known Regions Hospital in Minnesota. This innovative forward thinker also described the Foley-Y-Plasty for treating pelvi- ureteric junction strictures as well as inventing a hydraulic operating table and a rotatable resectoscope.

Since then different materials have been used, but the basic design of the 'Foley' catheter has stood the test of time. It is the trusted companion of the present day Urologist.

UP.165

Hippocrates Is an 'Icon' Of Medicine; Is this Still Relevant to Urologists Today?

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Introduction and Objective: Hippocrates working in Cos (460-370BC) was not the first to practice medicine. He is famed for writing the Hippocratic Corpus, the Hippocratic Oath and is named the 'Father' of medicine. Busts of Hippocrates in varying medical settings confirm his historical status. Icons capture the ideal that the society wishes to emulate; Hippocrates can be seen as an icon, but is this relevant to urologists today?

Materials and Methods: Literature review

Results: The majority of Hippocratic methodology to cure disease is not relevant to today; but it also included commitment to empiricism, education and recognition that medicine is for the benefit of the sick. These values continue: urological associations commit to education, scientific pursuit and patient centred care. The Hippocratic Oath instructs doctors. Guidance from professional bodies such as the GMC help to define the profession, yet the Hippocratic Oath has not been discarded. It has undergone evolution; but those few UK Medical Schools that still 'profess' an oath are unlikely to use the original. Interpretations of the Oath include awareness of competence in technical procedures, which is the root of surgical safety. The Oath may have defined urology as the first surgical specialty. Hippocrates Corpus is an example of record keeping, which is required for good medical practice; national urological surgical databases are a modern example. Hippocrates' name is often cited in modern research. His name is also invoked to remind doctors of their duty; in recent news the doctors' 'duty' was argued against strike action. His name was used to displace other methods of healing; the medical marketplace is still ever changing

Conclusion: Hippocrates' is still pertinent to urologists today; his visions and work live on and are the founding ethics of our practice. He is a true icon; as shown by his unification of our profession throughout the ages.

UP.166

Gleason Grading System in Prostate Cancer - Evolving or Evolved?

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Introduction and Objective: In 1977 Donald Gleason analysed correlation of histological grade of prostate adenocarcinoma with staging and prognosis [1]. It was based on Veterans Administration randomised study. In 2004 Gleason Grading system was endorsed by WHO. In this presentation we discuss the history of Gleason Grading system and its future directions.

Materials and Methods: We performed a literature search on Gleason Grading system from 1960 till present date. Thousands of articles were found and we selected only the full text articles with Gleason Grading system as main focus of discussion. We have chosen Gleason Grading system as it is a landmark prostate cancer grading system which influenced treatment decision and is also still evolving.

Results: The Original 1977 Gleason grading system was modified later in 2005 and 2014 by International Society of Urologic Pathology (ISUP) consensus meetings [2, 3]. The 2005 ISUP consensus resulted in discontinuation of Gleason grade 1 and 2 due to poor reproducibility and migration of large cribriform growths and clusters of poorly formed glands from pattern 3 to 4. These changes resulted in a shift towards higher Gleason score being reported [4]. Modified system correlated better with clinical stage and patient outcome. In 2014, the ISUP consensus meeting introduced new prognostic grade grouping system which was also adopted by WHO in 2016 classification.

Conclusion: Gleason Grading system was incorporated in to WHO and AJCC/UICC staging systems. It is used to make treatment decisions in all major guidelines like NICE, NCCN and EAU. None of the other grading systems stood the test of time.

UP.167

5000 Years of Stones - What Have We Learnt?

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Introduction and Objective: Urinary tract stones are one of the most common, painful and potentially dangerous presentations in Urology. We present a historical review of their management, from the first description to the more recent past

Materials and Methods: A review of literature from the Greco-Roman period to the present day was performed using JSTOR, PubMed and Google Books.

Results: The earliest reports of stone disease were from 3200BC in the medical texts of Mesopotamia. From 600BC stone removal via perineal lithotomy was recorded in India, becoming the procedure of choice until the 1500s with minimal adaptation. Throughout the medieval period in Europe, lithotomists toured between towns offering their services, often performing the procedure in public with no anaesthesia. In the 18th century the famous Dutch physician Boerhaave began to draw attention to the poor outcomes of the procedure and in turn recommend conservative management including increased fluid intake. Interestingly Boerhaave himself went on to develop urinary tract stones, along with other notable patients Oliver Cromwell, King George IV, Benjamin Franklin, Isaac Newton and Michelangelo.

The 19th century finally saw the development of an alternative surgical technique – litholopaxy. Bigelow, who progressed this crushing procedure, described a fall in mortality rate to 2.4% from 25% in his 1878 paper 'Lithotrity by a single operation'. The early part of the 20th century saw increasing use of Nitze's cystoscopy and lithotripsy internally with electrohydraulics. This was followed by extracorporeal shockwaves (ESWL) which finally provided a non-invasive technique.

Conclusion: We report the transformation of stone management from a highly dangerous procedure to the simple procedures we take for granted today.

UP.168

Sonourethrography in the Evaluation of the Male Urethra for Assessment of Urethral Stricture: Single Institution Study

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Introduction and Objective: Radiographic retrograde urethrography has traditionally been the preferred technique used by urologists to image the urethra. Since originally described by McAninch in 1988, ultrasonic imaging of the urethra has evolved into a powerful and clinically useful tool for the accurate delineation of urethral pathology. The aim of our study was to evaluate urethral stricture using high resolution ultrasound (sonourethrography) and to detect degree of spongiofibrosis and correlate with surgical findings.

Materials and Method: A total of 80 male patients between age group 20 to 65 years with symptoms of lower urinary tract obstruction underwent sonourethrography (SUG), between 2013 and 2015 in the department of urology. The findings of sonourethrography are compared with the findings of cystoscopy and intra-operative findings.

Result: Most of the patients presented with thin stream of urine (90%), followed by straining on micturition (60%). Etiologically, the commonest cause for stricture was found to be traumatic which was seen in 43% cases followed by previous surgery in 25% and infective in 18% cases. No cause could be detected in 14% cases. All strictures were evaluated and treated cystoscopically with visual internal urethrotomy (64%) or at open operation (36%), which allowed comparison of the ability of each study to predict operative stricture length. Anterior urethral strictures were found in majority of cases 70 followed by calculi 6 cases and diverticuli 4 cases on sonourethrography with sensitivity and specificity of 98.5% and 90.9% respectively. The most common site involved was bulbar urethra 53.3 % followed by penile in 33.3 % & diffuse in 13.3% on sonourethrography. Of 65 cases detected to have spongiofibrosis at surgery, 44 were detected by sonourethrography with sensitivity and specificity of 81.4% and 92.3% respectively.

Conclusion: We conclude that sonourethrography is a promising tool a reliable investigation for evaluation of male anterior urethral pathology and degree of spongiofibrosis for defining male urethral strictures. It is simple, noninvasive, inexpensive and repeatable with no exposure of radiation. We believe that sonourethrography should be included in the pre-surgical investigation protocol for urethral stricture and for post -operative follow-up of patients. Larger prospec-

tive trials are needed to make a definite clinical recommendation.

UP.169

Correlation between Multiparametric MRI (PI-RADS V2) and the New Prostate Cancer (Pca) Grading System of Pathological Specimen in Robotic-Assisted Laparoscopic Radical Prostatectomy (RALP)

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Introduction and Objectives: The use of Multiparametric MRI (mpMRI) and the introduction of PI-RADS v.2 have changed dramatically the diagnosis and the management of PCa. Otherwise, a new PCa grading system has been described in order to reduce the overtreatment and simplify the classification of the prostate cancer pathology. The aim of our study is to evaluate the correlation between these novel classifications (mpMRI PIRADS V2 and the new PCa grading system) in our serie of robotic-assisted laparoscopic radical prostatectomies (RALP).

Materials and Methods: We retrospectively analyzed our serie of 103 patients who underwent a RALP between January 2015 and September 2016 in our center. All patients were diagnosed with clinically significant prostate cancer (according to Epstein Criteria). A mpMRI was performed before the surgery in 56 of the 103 patients included, six of them had important artefacts due to a prior transrectal biopsy. All mpMRI were performed using a 1.5 T system with external antennal and data were reviewed according PI-RADS v2 by expert uroradiologists. Pathological specimens were classified according the new PCa grading system: grade 1: Gleason 6 (3+3), grade 2: Gleason 7 (3+4), grade 3: Gleason 7 (4+3), grade 4: Gleason 8 (4+4) and grade 5: Gleason 9-10. Statistical data was achieved with SPSS v.20: The agreement between the mpMRI and PCGS was measured by the kappa concordance coefficient (KCC). Hypothesis testing was performed using the chi square test and the Fisher's exact test.

Results: We analyzed 50 patients with a validate mpMRI and the pathological specimen. PCa was detected by mpMRI (defined as a index lesion with a PIRADS 4 or 5) in 46 patients, with a sensitivity of was 92%. Four tumours were undiagnosed: one of them was a PCa Grade 2 and It was probably due to consequences of a previous transurethral resection of the prostate. The other three were a PCa Grade 1. Mean diameter of index lesion was 17.6 mm (range 8-36); mean volume of prostate, 39.73 cc (range 11-110) and mean PSA level was 8.71 ng/ml. About the PCGS there were 12 patients (24%) Grade 1, 19 (38%) Grade 2; 12 (24%) Grade 3, 5 (10%) Grade 4 and finally, 2 (4%) Grade 5. As for tumor volume (pT): pT2a: 6 (12%) ,pT2b: 4(8%), pT2c:20 (40%), pT3a: 12 (24%), pT3b: 8(16%) . Mean volume of lesion was 6.67 cc. Mean weight of prostate: 47, 49 gr (19-105). If we analyze the accuracy of the mpMRI, there is a concordance between cTumour status and pT in 74 % (37) with a Kappa concordance coefficient (KCC) of 0.61 (p<0,001). Relating to extracapsular extension, mpMRI had a sensibility of 75% (detecting 15 cases of extracapsular progression and missing 5 extracapsular extension), KCC: 0.51 (p<0.0002). A statistical association (p<0.001) was confirmed. There was a statistical association between those patients scored with PIRADS 4-5 and diagnosis of PCGS > 2(or equal) (p<0.02).

Conclusions: According to our results, mpMRI has a high level of accuracy detecting clinically significant prostate cancer. mpMRI is a reliable tool to establish the status of extracapsular extension. The association between PIRADS 4-5 and Grades 2 or higher is confirmed.

UP.170

Risk-Stratified Pre-Biopsy mpMRI: A Realistic and Sustainable Approach?

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Introduction and Objective: Multiparametric MRI (mpMRI) is widely used for local staging of prostate cancer (PCa); however, increasingly mpMRI is utilised as a diagnostic tool pre-biopsy. NICE and EAU recommend mpMRI for patients managed on active surveillance (AS), for local staging, and before a second biopsy. This causes significant demand for mpMRIs; we investigate the feasibility of introducing a protocol driven service for pre-biopsy mpMRIs.

Materials and Methods: One hundred and sixty one patients had a first TRUSS biopsy between January 2014 and April 2015 were retrospectively evaluated with ≥20 months follow up.

Results: One hundred and forty two patients had a PSA <50, a T1/2/3 DRE, and were <80 years old. Those with a PSA >50, T4 DRE or >80 years would unlikely benefit from mpMRI. Our proposed inclusion criteria for pre-biopsy mpMRI were PSA 10-49.9 or T2/3 DRE. This would result in 83/142 having a pre-biopsy mpMRI. The outcome of the 59 remaining patients was analysed. Twenty six subsequently had an mpMRI for staging or active surveillance. This leaves 33 patients, 17 were diagnosed with PCa; 4 had radical treatment for Gleason 6, and 4 went on AS. Sixteen had benign biopsies; 12 were discharged and 4 continued PSA surveillance. Therefore, 16/161 (10%) (4 Gleason 6 having radical treatment; 12 benign patients discharged) had unnecessary mpMRIs.

Conclusion: Considering current pressures on resources, a risk-stratified approach does not significantly increase requirements based on NICE guidance. Our data, when considering further mpMRIs required after risk-stratification suggests only those having active treatment for Gleason 6 or those discharged following benign biopsies have unnecessary mpMRIs.

UP.171

The Significance of Bladder Filling during Computerized Tomography in the Diagnosis of Bladder Rupture

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Introduction and Objective: Computerized tomography (CT) is the method of choice for establishing patients with abdominal and/or pelvic trauma. However, the sensitivity of CT for detecting bladder rupture has been questioned. We investigated the roles of CT as the initial evaluation of abdominal and pelvic trauma in diagnosis of bladder rupture.

Materials and Methods: We reviewed the medical records and radiographs of 93 patients with bladder rupture for last 10 years. And among them, all radiographs of 60 patients who underwent both CT and retrograde cystography were evaluated independently by two urologists who had no knowledge of the final diagnosis.

Results: Among 60 patients, all of patients were correctly diagnosed by retrograde cystography, but the CT diagnosis was correct in only 46 patients (76.7%), who were 37 patients (80.4%) with showed the intraperitoneal rupture and 9 patients (19.6%) with extraperitoneal rupture. And of the 14 patients (23.3%) who were negatively by the CT, all showed the sign id inadequate bladder distention.

Conclusion: If properly performed with adequate bladder filling, CT is sensitive for detection of bladder injuries as conventional cystography. Especially, in trauma patients with hematuria and suspected other organ injury, CT-cystography with bladder filling may be as accurate as conventonal cystography and obviate the need for an additional cystography.

UP.172

Testicular Rupture or Testicular Fracture? Defining a Diagnosis and Management Pathway

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Introduction and Objectives: Testicular trauma is relatively uncommon and management aims to prevent organ loss. In this paper, we discuss the difference between testicular rupture and testicular fracture with regards to pathophysiology, radiological appearance and clinical management.

Materials and Methods: We reviewed testicular trauma cases at our tertiary trauma centre and performed a review of available English language literature to describe and differentiate between testicular rupture and testicular fracture.

Results: Blunt testicular injuries accounts for 85% of all testicular traumas. Ultrasound findings can range from scrotal haematoma or haematocele to testicular rupture or fracture. Testicular rupture is more commonly reported, whilst testicular fracture is quoted more rarely. Testicular rupture represents the disruption of the tunica albuginea, whilst testicular fracture is a 'break' in the testicular parenchyma. The two pathologies can occur in synchrony. Management should always be tailored to the specific injuries. Testicular rupture is best managed by scrotal exploration and repair of the tunica albuginea to improve the chances of testicular function preservation. In contrast, testicular fracture can be managed conservatively when there is

no haematoma or haematocele requiring evacuation and the tunica albuginea is intact.

Conclusion: Testicular rupture is the disruption of the tunica albuginea, whilst testicular fracture is a 'break' in the testicular parenchyma which can exist with or without disruption of the tunica. Better understanding and usage of terminology by Urologists and Radiologists is important for decision making in the management of these patients.

UP.173

Syringoceles of Cowper's Ducts and Glands in Adult Men – An Uncommon Pathology with Potentially Serious Consequences

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Introduction and Objective: Cowper's syringoceles are uncommon, usually described in children and most commonly limited to the ducts. We describe more complex variants in an adult population affecting, with varying degrees of severity, the glands themselves and the complications they may lead to.

Materials and Methods: One hundred consecutive urethrograms of patients with strictures, who may or may not have had endoscopic intervention but not urethroplasty, were reviewed. Twenty six patients with Cowper's syringoceles who were managed in our unit between 2009 and 2016 were then evaluated. Mean age was 41.1 years (19 – 63years). Presentation, radiological appearance, treatment (when indicated) and outcomes were assessed.

Results: Of the 100 urethrograms in patients with strictures, 33% demonstrated filling of Cowper's ducts or glands to some extent. This was seen twice as commonly on the ascending study and occurred predominantly in patients with bulbar strictures. Only 1 of 26 patients with non-bulbar strictures had a visible duct/gland. Previous urethrotomy/ dilatation made no difference to the incidence of the positivity for duct/gland nor did stricture length and tightness.

Of the 26 patients with symptoms, 15 presented with poor flow. In 4, a grossly dilated Cowper's duct obstructed the urethra on urethrogram. In the remaining 11 a bulbar stricture was the cause of symptoms and syringocele identified as an incidental finding. Eight patients presented with perineal pain. In 6, fluoroscopy and MRI revealed complex multi-cystic lesions within the bulbo-urethral glands in continuity with the dilated ducts. Four patients presented with perineo-scrotal abscesses, one of whom had a chronically discharging perineal sinus. In the 11 with urethral strictures, the syringocele was no longer visible after urethroplasty. In 3 of 4 patients, obstructive symptoms secondary to a grossly dilated Cowper's duct resolved after transperineal excision (n=2) and endoscopic de-roofing (n=1). The fourth patient, with mild symptoms, was managed conservatively. Five of 6 patients with large complex syringoceles involving Cowper's glands were managed by surgical excision with symptomatic relief in all.

Conclusion: Cowper's syringocele in adults may be more common than previously thought and may be a cause of lower urinary tract symptoms or be associated with serious complications which usually require surgical treatment.

UP.174

One Stop Haematuria Clinic – How do we Assess?

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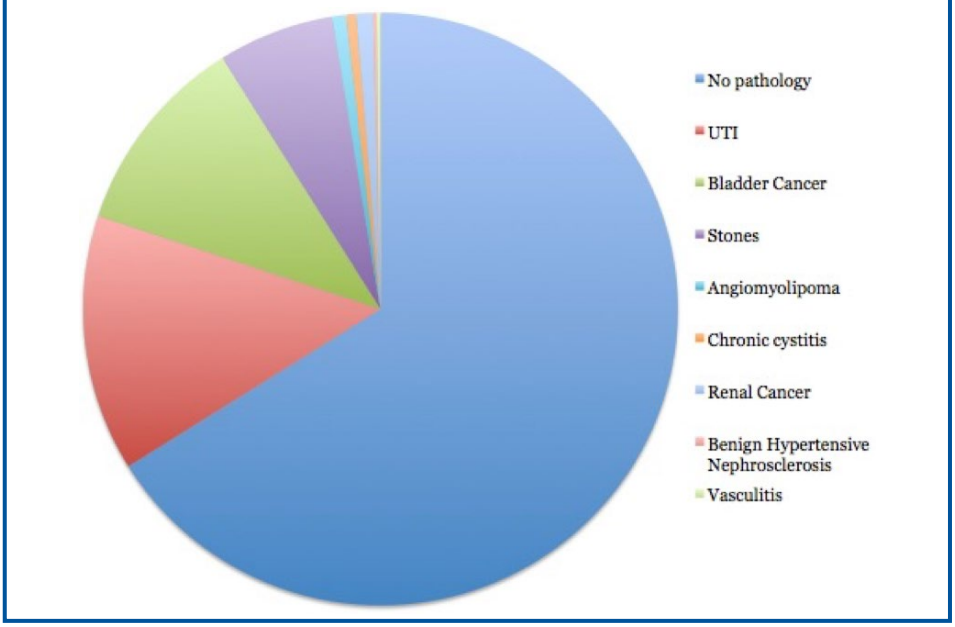
Introduction and Objectives: To evaluate the range of pathologies identified in patients attending One Stop Haematuria Clinic - OSHC and to examine the value of CT imaging of these patients. Identify the need for change of current practice of Urgent Suspected Cancer (USC) referral in line with the updated NICE guidelines (NG12 June 2015).

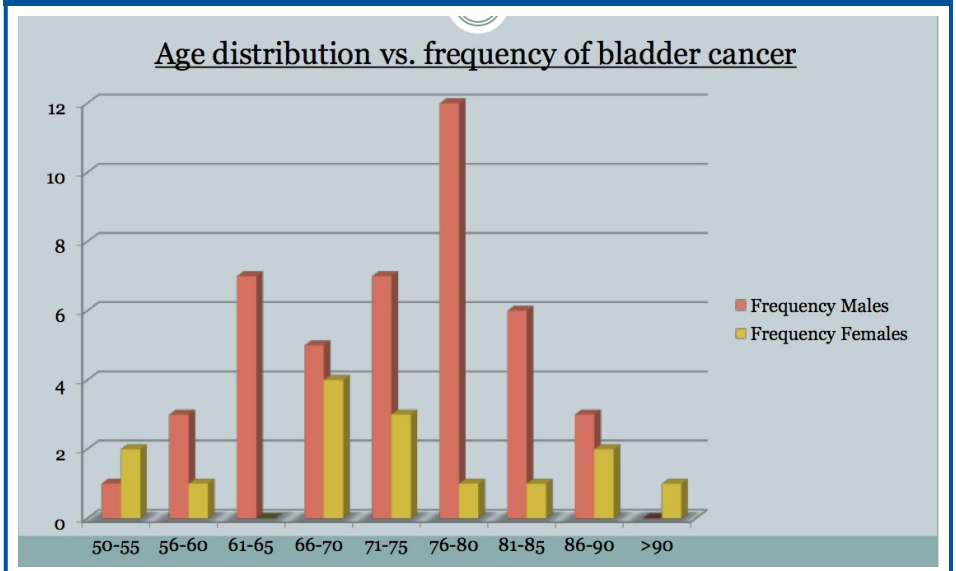
Materials and Methods: This was a retrospective study of 536 patients (Males: 218, Females: 318) attending OSHC, referred with visible haematuria (VH) or non-visible heamaturia (NVH), VH: 364 (68.0%), NVH: 168 (31.3%), No haematuria: 3 (0.6%) between June 2014 – August 2016. The mean age was 65 years (range: 22-92). All patients were investigated by flexible cystoscopy, 534/536(99%) had US, 229/536(42%) had CTU.

Results: Bladder Cancer was diagnosed in 59/536 (11.0%) patients, {VH -52 (14.3%), NVH - 6 (3.6%) Males - 44/218 (20.2%), Females: 15/318 (4.7%)}. Smoking history was significantly associated with the risk of diagnosing bladder cancer but only in over 50's (Smokers – 16 (27%), Ex-smokers – 23 (39%),

UP.174, Figure 1. Results: All Pathology



UP.174, Figure 2. Bladder Cancer Breakdown – Sex & Age



Non-smokers – 20 (34%). Renal Cancer was found in 5/536 (0.9%) patients. (VH - 4(1.1%), NVH - 1(0.6%), Males - 4/218 (1.8%), Females - 1/318 (0.3%)). Of 5/536 renal masses seen on CT scan, 1 was not detected on USS imaging (Deemed Scarring). Malignancy was not diagnosed in patients less than 52 years old (in line with NICE guidance)

Conclusion: On the basis of these results and update NICE USC referral guidelines, we should not urgently investigate NVH in under 50s. No need for CT urogram for assessment of patients with haematuria unless other pathology is picked up by US. We should ensure all GP's follow NICE guidelines (NG12) before referral.

UP.175

Magnetic Resonance Imaging (MRI) in Pelvic Fracture Urethral Injuries to Evaluate Urethral Gap: A New Point of Technique

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Introduction and Objectives: MRI is a helpful imaging adjunct especially in complex cases of PFUI, which includes patients with long gaps, floating bone chips, and rectourethral fistula and bladder neck injury. Conventionally radiologists perform MRI on an empty bladder. The aim of this study was to evaluate the urethral gap via MRI using a new point of technique.

Materials and Methods: From 1996 to 2016 1064 cases of PFUI have been seen at our institution with about 10% being complex. MRI was routinely acquired by for complex PFUI by radiologists using traditional protocol involving IV contrast. We formulated a technique where the images were obtained without giving IV contrast and using urine as a natural MRI contrast. Ten consecutive cases of complex pelvic fracture urethral injuries were prospectively evaluated with the new MRI protocol. First, a T2 image acquisition was performed. Urethral gap measurements by 4 radiologists were recorded for each case. A second T2 image acquisition was performed with patient lying on the table with a full bladder, SPC clamped, straining to pass urine post administration of Tamsulosin while at the same time a premixed solution of saline and lubricating jelly is instilled in the urethra. The bladder was filled physiologically prior to the study. Urethral gap assessments were repeated using the same 4 radiologists. Additionally, 4 urologists were shown images from each phase of the study and their visual score was recorded – very satisfactory (4), satisfactory (3), disappointed (2) and extremely disappointed (1).

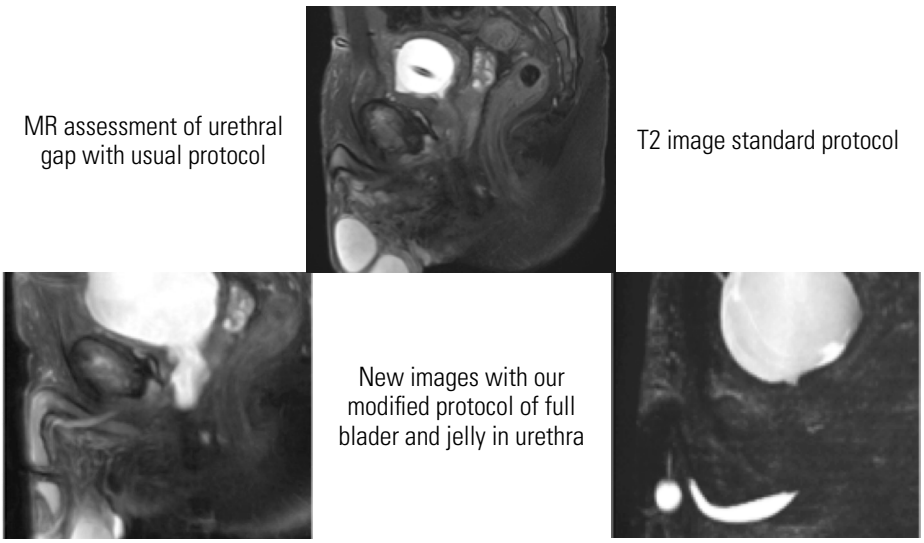
Results: See table

Conclusion: The described novel technique of MR assessment of urethral gap in PFUI shows promising results and is true reflection of the actual urethral gap which helps in planning surgical approach. The simple modification of having a full bladder,and straining (dynamic images) helps to mimic a conventional VCUG and RGU along with advantages of MRI.

UP.175, Table 1. Results

Patient number	MRI standard gap (cm)	MRI novel technique gap (cm)	Measured Difference (cm)	Surgical Approach Maneuvers	Urologist Assessment Mean (range 3-4)
1	4	3.2	0.8	Step3	4
2	3.5	2.7	0.8	Step3	4
3	3	2.4	0.6	Step3	4
4	4	3.3	0.7	Step3	4
5	5	4	1	Step4	4
6	4	3	1	Step3	4
7	3.5	2.4	1.1	Step3	4
8	3	2.6	0.4	Step3	3
9	2.8	2.1	0.7	Step3	4
10	3	2.7	0.3	Step3	3

UP.175, Figure 1.



UP.176

Benefit of Patient-Based Virtual and Mixed Reality (VR and MR) for Image Guided Urological Surgical Navigation

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Introduction and Objective: We examined whether VR and hologram technology are useful in urological surgery, especially robotic surgery.

Materials and Methods: We studied whether navigation surgery using VR and hologram technology is possible in five each cases of robotic partial nephrectomy and robotic prostatectomy. By using the technique of VR, this VIVE improves space recognition by displaying the organ and the resected area with a size that surrounds the surroundings of the surgeon, so that the positional relationship can be experienced throughout the body. Moreover, it has a head-mounted display and a wireless controller, and we can operate it ourselves freely. For the hologram, MR technology using a head mount called a Hololens developed by Microsoft was applied. That is, CG images were superimposed on the patient's body, and anatomical navigation was performed.

Results: VR and MR contributed to shortening of resection time and reduction of bleeding volume in partial nephrectomy as compared with previous surgery. The surgical margin was negative in all cases of kidney cancer surgery. No complications such as leakage of urine from the urinary tract were observed. Using VIVE, the depth, the three-dimensional feeling and the immersive feeling of organ dissection were more intuitively understood than before. Therefore, it was easy to intuitively recognize the positional relationship with the feeding vessels of the tumor and the renal calyx, and there was an advantage to compensate for the lack of touch of da Vinci. Since VR made it possible to navigate in a three-dimensional space, a sense close to da Vinci's 3D viewing monitor was ob-

tained. In prostatectomy, we could intuitively understand the deep depth of the pelvis by seeing it around. Specifically, it helped to confirm the angle of resection and understand the positional relation with the ureter in the cases of middle lobe proliferation protruding into the bladder. By making the image of the blood vessel transparent, the accuracy of pelvic lymph node dissection was improved.

Conclusion: The VR and MR surgical navigation provided better understanding of depth perception for understanding intra-pelvic anatomy than conventional image guidance on the flat monitor in robotic and open urological surgery.

UP.177

Is a Contemporary Management Algorithm Possible for Atypical Small Acinar Proliferation and High Grade Prostatic Intraepithelial Neoplasia in the Era of The Multi-Parametric MRI?

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Introduction and Objective: Multiparametric Magnetic Resonance Imaging (mpMRI) is now an established investigation for the diagnosis and surveillance for organ confined prostate cancer. Atypical small acinar proliferation (ASAP) and high-grade prostatic intraepithelial neoplasia (HGPIN) are premalignant prostatic lesions. Guidelines regarding diagnosis and surveillance of these lesions are contentious. The aim is to perform a comprehensive review of current evidence regarding ASAP, HGPIN and mpMRI to ascertain a consensus for a current management algorithm.

Materials and Methods: Comprehensive contemporary review of medical literature was undertaken in line with PRISMA recommendations by two separate authors. Articles pertaining to ASAP, HGPIN and mpMRI were assessed and included in the review if relevant. Discrepancies were resolved between authors prior to formal assessment.

Results: Contemporary evidence regarding the aetiology, natural history, suiveillance and management of ASAP and HGPIN is limited. As such, the use of mpMRI in the management and surveillance of diagnosed ASAP and HGPIN lesions remain unclear also. More comparative studies with subsequent histopathological data and patient follow up is required. Overall, the key for mpMRI utility in premalignant lesions may lie in interval change on serial mpMRI.

Conclusion: The management of such lesions remains contentious, and the addition of mpMRI introduces further uncertainty given its ability to pick up indolent lesions and its use in targeted biopsy. A complete management algorithm is not possible at this stage. With the continued accumulation of evidence and consequent resolution of key dilemmas this may be plausible in the future.

UP.178

3D Reconstructed Anatomical Images in Guiding Robotic Surgery: A New Dimension

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Introduction and Objective: 3D reconstructed images used for 3D printing have great clinical utility unto themselves by allowing clinicians to visualize affected tissues and their relative anatomy prior to operation. We aimed to assess the feasibility and potential advantages of a system that displays 3D reconstructed medical imaging parallel to the 3D images displayed in the surgeon console of robotic assisted surgery.

Materials and Methods: Patients selected as appropriate cases were those with previous surgery, endophytic renal masses or complex anatomy. DICOM images from patient's radiology were used to create 3D reconstructions of targeted sites. Two types of operation groups were investigated: Partial nephrectomy and pelvic lymph node dissection. Prostate specific membrane antigen PET positive sites were used as localisers for 3D reconstruction for the latter. A single surgeon, experienced in robot-assisted laparoscopic surgery, completed cases with 3D reconstructions visible in the surgeon console unit and was surveyed following their completion to assess ease of use of the parallel images and their utility in the cases.

Results: Marriage of the DaVinci system and external 3D reconstructed images was successfully achieved. The 3D reconstructed images were used successfully in both cases to create a parallel series of images that could be viewed during surgery through the DaVinci console. These images could be manipulated throughout the cases to mimic the orientation of in-vivo structures. The operating surgeon expressed satisfaction with the 3D images and stated that intraoperative localization of disease sites and decisions for operative technique were improved compared to cases without 3D adjuncts.

Conclusions: The marriage of 3D reconstructs to real-time 3D images seen in robotic cases has definite potential benefits. Reconstructed 3D Images afford the operating surgeon the ability to improve localization of sites of interest and improve the surgical experience. This technology is not limited to robotic consoles and may also prove beneficial in laparoscopic surgery where pathology is difficult to localize.

UP.179

One to One Correlation of Needle-Based Optical Coherence Tomography with Histopathology: A Qualitative and Quantitative Analysis in 20 Prostatectomy Specimens

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Introduction and Objective: Prostate cancer treatment is shifting from radical to focal therapy. Instant tumor visualization on a microscopic level is crucial for clinical application of focal therapy. Optical coherence tomography (OCT) is a light-based imaging technique that facilitates instant three-dimensional tissue visualization on a µm scale down to ~2mm depth. The probe fits trough a needle and images can be analyzed be eye and quantitatively by signal analysis. The objective is to define diagnostic accuracy of needle-based OCT for prostate cancer detection in a cohort of 20 patients.

Materials and Methods: Twenty prostates were analyzed by needle-based OCT after radical prostatectomy. For precise correlation, whole mount histology slides were cut through the OCT trajectory. An uropathologist analyzed and annotated tissue types in the prostate on these slides. OCT data were precisely fused with histopathology slides; thus, histopathology of every OCT image was known. OCT images were classified in histological categories. Two reviewers independently scored the OCT images into these categories. Sensitivity and specificity for detection of malignancy on OCT were calculated. Analysis of light scattering properties was performed by automated calculation of the attenuation coefficient (the decay of light in depth) and the residue, a difference of the fitted and the measured signal, as a measure of inhomogeneity.

Results: Visual analysis assessment showed that with OCT the reviewers could reliably differentiate malignancy from fat, cystic atrophy, regular atrophy and benign glands. Differentiation of malignancy from stroma and inflammation is less successful. Sensitivity and specificity for visual detection of malignancy on OCT were calculated to be 83% and 85%. Quantitative analysis of the light attenuation coefficient for differentiation between stroma and malignancy showed no significant difference with an AUC of 0.67. The residue of the fitted signals correlated with the malignancy, resulting in an AUC of 0.80.

Conclusion: Precise correlation of histology and OCT is essential to understand what we see and measure on OCT. Visual malignancy detection has reasonable sensitivity and specificity. Quantitative malignancy detection is promising. Future studies will focus on increasing malignancy detection in the prostate by improving quantitative analysis and by combining additional optical imaging modalities.

UP.180

Online Urology Tele-Conferencing of Radiologic and Endoscopic Images Transmitted by Smartphones Using Viber Messaging

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Introduction and Objective: In our 2006 study, we presented reliability of Cellphone "Multimedia Messaging Service" (MMS) transmitted uro-radiographic images for referral of emergency urological conditions. In our 2014 study, we established reliability of Smartphone application "WhatsApp Messaging" transmitted endoscopic images for intra-operative tele-referrals. In this present 2017 study, we aim to determine reliability of Smartphone application "Viber Messaging" transmitted radiologic, cystoscopic and ureteroscopic images for "online urology tele-conferencing."

Materials and Methods: Radiologic, cystoscopic and ureteroscopic images of urologic procedure being performed intra-operatively by attending urologist were photographed with Smartphones and transmitted online (using "Wi-Fi, Mobile data or Data connection" Smartphone technology) through "Viber Messaging," a cross-platform instant messaging application. Accompanied with brief patient history, physical examination findings and results of imaging studies, the images photographed were shared online exclusively with the six urology consultants of our Department. To protect confidentiality, no information that identifies a patient was disclosed. The urology consultants were consulted via "online urology tele-conferencing" through "Viber Messaging" if they "Agree" or "Disagree" with the planned management of attending urologist currently performing endoscopy.

Results: A total of thirty-eight radiologic, cystoscopic and ureteroscopic images were photographed by Smartphones and transmitted through "Viber Messaging" by the respective attending urologist performing endoscopy. A total of 158 replies were received respectively by the five other urology consultants of our Department. The other urology consultants replied to the attending urologist doing cystoscopy or ureteroscopy with a "Viber text reply" or a "Viber heart icon." Using their respective Smartphones, the urology consultants transmitted "Agree" in 132 (83.5%) of replies and transmitted "Disagree" in 26 (16.5%) of replies. There was significant agreement ($p < 0.0001$) in the planned management of attending urologist with the other urology consultants of our Department. The "online urology tele-conferencing" agreed consensus among urology consultants assisted the attending urologist in his planned treatment.

Conclusion: Our present 2017 study showed that the Smartphone application "Viber Messaging" transmitted radiologic, cystoscopic and ureteroscopic images for "online urology tele-conferencing" is reliable. This was demonstrated by the significant agreement of urology consultants of our Department with the planned management of attending urologist performing the endoscopic procedure.

UP.181

Prostate Cancer Heterogeneity: Texture Analysis of Multiple mpMRI Sequences for Detection and Stratification at Time of Biopsy

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Introduction and Objective: To develop and test in a biopsy population a texture analysis score, entropy score, based on analysis of multiple MRI sequences and derivatives for detection and stratification of prostate cancer in view of selection of MRI targets for biopsy.

Materials and Methods: Under ethical approval, 134 Volume of Interest (Vois) were retrospectively generated from 20 consecutive patients who underwent a clinical 1.5T mpMRI (T2WI, DWI with ADC map and DCE WI) at time of biopsy. Vois comprised zonal anatomy segmentation, normal peripheral zone and transition zone, biopsy targets and cancer. Reference standard for correlation was cognitive targeted biopsy and systematic saturation biopsy. As Order 1 texture analysis, calibrated Entropy (E) for each imaging feature was computed and plotted as a multiparametric score defined as Entropy Score (ES)= E ADC+ E Ktrans + E Ve+ E T2WI. Area Under the Curve (AUC) calculations were performed for significant cancer (pattern 4 and/or more than 3 mm of cancer). Correlation to Gleason Score (GS) and Maximum Cancer Length (MCL) were calculated using Pearson and Spearman.

Results: Cancer (GS 6- 8) was found in 12 of the 20 patients with a median PSA of 8.22ng/ml. ES performed respectively an AUC of 0.89 and 0.88 for detection of significant cancer among the 34 Vois for targets and cancer and all segmented Vois. Best estimated threshold for the ES of 16.61 NAT led to a sensitivity of 100% and negative predictive value of 100%. Under this threshold, 52% of score 3 targets wouldn't have been selected for sampling. AUC for ES trended to be higher than each of its component. Significant cancer (ES=17.96 ±0.72 NAT; CI 95%) showed a significant higher ES than non-significant cancer (ES=15.33 ±0.76 NAT; CI 95%)). ES positively correlated with Gleason Score (rs =0.5683, p=0.033) and MCL (p=0.781; p=0.0009).

Conclusion: Texture analysis with ES performed high performances for detection and stratification of significant prostate cancer in this pilot biopsy population with potential to select accurately MRI targets for biopsy.

UP.182

A Weight on Your Shoulders - An Audit of Lead Gown Weights

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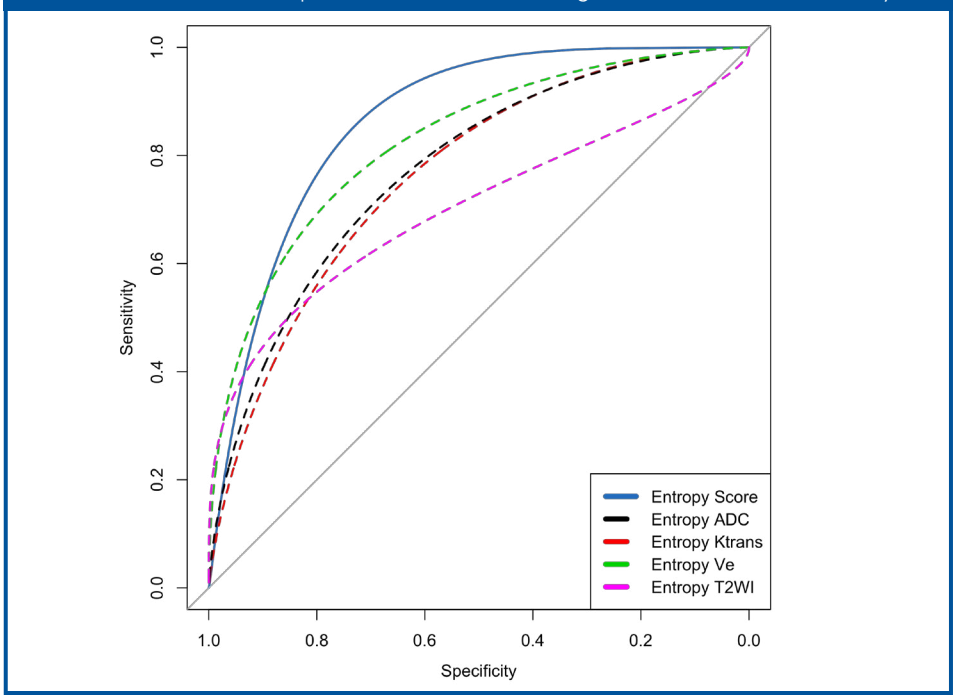
Introduction and Objective: Lead gowns have evolved over the decades with manufacturers striving to create a lightweight product that maintains adequate protection from radiation. It has been shown that the added weight of protective gowns can cause chronic musculoskeletal stress for users(1, 2). We aimed to audit the variation in weight of available protective outerwear options at four hospitals in Melbourne.

UP.181, Figure 1. ROC Curves for Detection of Significant Cancer Using Entropy Score and Each of Its Component within the MRI Target and Cancer VOIS (B Analysis)



Materials and Methods: Across four sites lead gowns were weighed. Gowns were identified as small, medium, large or extra large according to manufacturers tagged sizing. Two types of gowns were identified; one piece apron or two pieces vest and skirt. Both designs require the additional thyroid guard. A single person was weighed without the gowns, with separate individual items and then all components. This process was repeated three times and the average weight recorded. The results were then compared using an unpaired t test.

Results: Table 1 reports the recorded weights of the outerwear. Age of the garmets was not able to be scertained. The weight of the three piece set weiged a minimum of 3.98kg and can be up to 7kg. A butchers apron two piece set weighed a minimum of 2.7kg and up to 4kg. When compared with large cross back butchers apron, the large three piece skirt and vest set was heavier (p=0.035).

Conclusion: Some theatres are stocked with old equipment, that is heavier, to supplement newer technology to meet demand. We fownd that the apron style garment is lighter than the three piece set. Surgeon ergonomics is often a part of health and safety that is forgotten and although the use of lead gowns is unavoidable for protection against radiation, hospitals should be phasing out older, heavier gowns as soon as possible in favour for newer lighter technology in order to attenuate work related musculoskeletal stress.

UP.183

Extracorporeal Shock Wave Therapy as a Diagnostic Method for Latent Chronic Prostatitis

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Introduction and Objective: Basically patients with chronic prostatitis have abacterial disease, but in some cases antibiotics are often effective. We supposed that in fact these patients have latent bacterial prostatitis which cannot be diagnosed by standard methods.

Materials and Methods: Twenty three patients with chronic pelvic pain syndrome (CPPS) with signs of inflammation (chronic prostatitis category III-a) were enrolled in study. All patients had at least 15 scores of National Institutes of Health Chronic Prostatitis Symptom Index (NIH-CPSI), all had ≥15 leucocytes in expressed prostatic secretion (EPS) and all had no growth of any microflora in EPS as well as polimerase chain reaction (PCR) on sexually transmitted infection and M.tuberculosis (Mtb) was negative. All underwent extracorporeal shock-wave therapy (ESWT) with the Dorier Aries® (Dornier MedTech GmbH, Germany) using smart focus technology by the following protocol: Two procedures per week, three weeks for a course of total 6 procedures. Parameters of ESWT were as follows: energy level 5-7 (according to individual sensitivity), energy density 0.056-0.085 mJ/mm2, 4000 – 5000 shock waves per procedure (according to individual sensitivity). In three weeks EPS microscopy and bacteriology, PCR of EPS were repeatedly measured.

Results: ESWT was well tolerated, where 19 patients approved to go up to the 7th level of energy, and four patients up to level 6. Directly after 3 weeks, after finishing the ESWT, there was no significant change in the NIH-CPSI scores, although we have found some positive tendencies in domains "pain" and "quality of life". Leucospermia increased twice: initially average number of white blood cells in EPS was 22.5, after ESWT – 48.4. In 18 patients the growth of microbes in EPS was found: E.Coli – in 9, Enterobacter spp – in 6, Staphylococcus spp – in 6, microbial association – in 3 patients. In 4 patients Mycoplasma genitalium was found by PCR, in 3 – Ch. Trachomatis, in 2 – M.tuberculosis. In seven patients prostatolithiasis was revealed, but concomitant renal stone disease was not diagnosed. In 5 patients among them (71.4%) the disintegration of prostatic calculi occurred after course of ESWT, confirmed by transrectal ultrasound investigation.

Conclusion: In fact CPPS / chronic prostatitis category III-a is often latent underdiagnosed bacterial prostatitis. ESWT allows revealing a latent infection and inflammation in 78.3%, including prostate tuberculosis. ESWT provides a disintegration of calculi of a prostate, that may be one more reason for the efficacy of the shockwave treatment for this indication.

UP.184

The Microbial Spectrum in Hospitalized UTI Patients in Two Siberian Clinics

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Introduction and Objectives: Urinary tract infections (UTIs) are about the most common diseases in hospitals. Result of the therapy for UTIs often is poor, recurrent course is in more the half of cases. One of the reasons is inappropriate antibacterial treatment: first, the prevalence of drug resistance is higher, and second, the antibiotic is inactive to the infection agent. E.Coli is considered as the most common cause for UTI, and all empiric therapy is aimed against E.Coli. Insufficient results compel to think about another cause of infection.

Materials and Methods: The aim of this study was to analyze the urine cultures performed at two Siberian hospitals (in Novosibirsk and Barnaul), during five years (2009-2013) for estimation the dynamic of microbial spectrum. We analyzed total of 714 aerobic urine cultures.

Results: Proportion of microbes was instable, but Gram-negative microflora predominated with maximal part in 2009 (84.7%) and minimal in 2011 (35.0%). Among Gram-negative microflora E.Coli was found in 37.1% - 70.4%, Klebsiella spp – in 5.8% - 33.7%, Proteus spp – in 3.0% – 9.0%. Among Gram-positive cocci Enterococcus spp was detected in 8.5% - 64.6%, Staphylococcus spp – in 2.4% - 35.4%. Highest susceptibility of microflora was to imipenem and fosfomycin (resistance had 0-2.7% of strains). Resistance to Cefalosporins 1-2 generation was up to 54.6%, to Norfloxacin – 70%.

Conclusion: We have found surprisingly unexplained instability of microbial spectrum in hospitalized UTI patients. Percentage of E.Coli varied in 2 fold 37.1% - 70.4%, Enterococcus spp was the second predominated microorganism – his percentage got 64.6%. Minimal resistance was to imipenem and fosfomycin.

UP.185

Clinical Features and Masks of Kidney Tuberculosis

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Introduction and Objectives: Urogenital tuberculosis (UGTB) is the second most common form of TB in countries with a severe epidemic situation and the third most common form in regions with low incidence of TB. 77% of men who died from tuberculosis of all localizations had prostate tuberculosis which had mostly been overlooked during their life time. In actual figures, this means about 19,000 men yearly in Russia. The main reason for late diagnosis is an atypical clinical feature of UGTB, it courses under the mask of another disease.

Materials and Methods: We analyzed 816 history cases of UGTB patients to estimate clinical features.

Results: Most common complains were flank pain (68%), dysuria (48%) and renal colic (24%); among laboratory signs - pyuria (78%) and haematuria (34%). Patients were treated by urologists or GPs with misdiagnoses of pyelonephritis (27%), cystitis (43%), cancer (8%) or urolithiasis (22%) during 5.6 years on average. Positive smear was in 17% and positive culture of Mycobacterium tuberculosis was in 44%. 64% were diagnosed in late complicated cavernous stage, when surgery is necessary – and 90% of operations were nephrectomy due to total involvement of kidney tissue.

Conclusions: Most common masks of UGTB are pyelonephritis, cystitis and urolithiasis. UGTB presents non-specific symptoms and laboratory findings, except for positive MBT culture, but only about 44% cases are culture-positive. This is one of the main reasons for late and poor diagnosis of UGTB. The significance of UGTB may be considerable when the high prevalence of overall TB and the asymptomatic nature of UGTB are taken into account.

UP.186

Are Statistical Reports on Extrapulmonary Tuberculosis Correct?

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Introduction and Objective: World Health Organization (WHO) defined Extrapulmonary Tuberculosis (EPTB) as TB of organs other than the lungs exactly, such as lymph nodes, kidneys, genitals, breast, liver, skin, bones and joints, and pleura. Accordingly Russian Guidelines pleural TB is a part of pulmonary TB, as pleura actually is a cover of lungs and belongs to respiratory system and thus couldn't be considered as extrapulmonary organ. Different approaches makes estimation of real epidemiology of EPTB impossible.

Materials and Methods: To confirm this point we estimated a spectrum of EPTB in Novosibirsk including and excluding pleural TB.

UP.186, Table 1. Spectrum of EPTB

Form of EPTB	Number of patients	% by WHO version	% by Russian version
Pleural	67	38.2	n/a
TB of bones and joints	38	21.7	35.2
CNS TB	29	16.5	26.8
UGTB	18	10.2	16.7
Lymph nodes	15	8.9	13.9
Others	8	4.5	7.4

Results: Total of 175 patients with EPTB were revealed in Novosibirsk in 2014: 67 had pleural TB and 108 had real EPTB forms. Comparison of WHO and Russians versions of a spectrum of EPTB is done in Table 1.

Conclusion: We see very different incomparable proportion of EPTB forms in dependence on its spectrum. We think pleural TB should be excluded from the spectrum of EPTB. Why isolated pleural TB is EPTB, but if it accompanied widespread destructive forms of pulmonary TB it is not counted at all? A rule of mathematic statistic notes – if one parameter of the system is significantly higher than others, this parameter doesn't belong to the estimated system. For example, the share of TB of CNS among real EPTB is 26.8%, but among EPTB including pleural TB – 16.6% only. What figure is true? For the best comparison we need unique approach, and Russian one is optimal.

UP.187

M. Tuberculosis and M. Bovis as a Cause for Shrinking Bladder

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Introduction and Objective: Urogenital TB (UGTB) is the second common form of TB in countries with severe epidemic situation and the third common form in regions with low incidence of TB. UGTB is complicated by bladder tuberculosis (BTB) in more than half of cases; late diagnosis and/or absence of pathogenetic therapy leads to the development of shrinked bladder up to full its obliteration. The intravesical bacillus Calmette-Guerin (BCG) after transurethral resection in Ta and T1 bladder cancer provides a significantly better prophylaxis of tumour recurrence than TUR alone. Nevertheless alongside with positive results many complications of BCG therapy, including lethal, were noted.

Materials and Methods: We describe two cases of shrinked bladder tuberculosis – one was caused by M. tuberculosis, and second – by M. bovis.

Results: Typical scenario of development of natural bladder TB grade 4 (classification of E. Kulchavenya) caused by M. tuberculosis, is demonstrated by case 1, and a case 2 demonstrates the iatrogenic bladder TB as a complication of BCG therapy.

Conclusion: BTB is a complication of kidney TB. Not all patients with natural bladder TB had mycobacteriuria, in 62% of patients diagnosis was confirmed by clinical and radiological findings as well as results of provocative tuberculin test. Specific histology in bladder biopsies is rare. It is unknown the degree and duration of contact Mtb with urothelium in case of natural BTB. In case of iatrogenic BTB as result of BCG instillation there is certain contact of Mtb with urothelium. In some conditions (co-morbidity, immunodeficiency, inflammation etc) infection agent may absorb and provoke BTB. Low resistance of macroorganism may lead to the spread of TB - especially in the prostate, the abdominal organs, regional lymph nodes, and in some cases it is possible generalization of infection with a fatal outcome.

UP.188

Safety and Efficacy of Different Methods of an Introduction of Anti-TB Drug for Prostate TB Patients

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Introduction and Objective: Tuberculosis (TB) remains global problem. The efficiency of the therapy of TB, like any other infection disease, depends on the antibiotic concentration in the affected tissue. A few numbers of antibiotics can penetrate prostate epithelium and manage high concentration. Also enough level of antibiotic in prostate tissue may be attributed to the level of inflammation as well as a method of introduction of the drug. The purpose of this study was to estimate which method of the introduction main anti-TB drug – rifampicin is safer and more efficient.

Materials and Methods: In our study 30 patients with prostate TB were enrolled. The average age was of 38.9 years (range 28 – 58). The patients were randomized in 3 groups; all received the therapy once day daily in 5 days. First group was treated with rectal introduction of the cocktail: procaini 0.5% - 20 ml, dimethyl sulfoxide 2 ml and rifampicin 0.6. Second group was treated with intravenous infusion of the rifampicin 0.6 with Sodium chloride 0.9% - 200 ml. Third group took rifampicin 0.6 in pills per os. Ejaculate was investigated before therapy and after ending – in 5 days. Most important aim for prostate TB patient is reducing of leucospermia (that means efficiency of the treatment) and improving of the quality of the ejaculate (that means safety of the treatment).

Results: Leucospermia decreased in 1st group on 37.2%, in 2nd group – on 49.0%, in 3rd – on 39.4%. So efficiency of rectal and peroral introduction was the same, but intravenous infusion was more effective. Sperm motility in first group decreased on 44.5%, in second – on 34.3%, in third – on 32.4%. Thus rectal introduction is more toxic for sperm, and intake per os and intravenous administration have the same toxicity.

Conclusion: Intravenous infusion of rifampicin in prostate TB patient is most efficient and less safe. Safety of rectal therapy and per os is the same and higher than intravenous therapy.

UP.189

Clinical Efficacy of Roxithromycin in Patients with Chronic Abacterial Prostatitis in Comparison with Ofloxacin

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Introduction and Objective: Fluoroquinolones are "Gold standard" for antibacterial therapy for chronic prostatitis. But using of these antibiotics is limited by growing resistance of infection agents to fluoroquinolones. Alternative may be using macrolides, as they provide good concentration in prostate parenchyma, are effective against intracellular micro-organisms, including chlamydia and mycoplasma, and exhibit definite anti-inflammatory and immunomodulatory effects.

Materials and Methods: To estimate the clinical efficacy of roxithromycin in chronic abacterial prostatitis Category IIIa, we compared the effect of roxithromycin with ofloxacin. A total of 67 patients with CP/CPPS were enrolled in study. All patients were randomized to two groups in open-label: group 1 included 35 patients who were treated with roxithromycin 150 mg twice per day, and group 2 included 32 patients, who were treated with ofloxacin 400 mg twice per day. Pathogenetic therapy was standard for our Clinic and was identical in both groups (prostanorm, afala and canephron). The patients were treated for 4 weeks and were subsequently followed for 12 weeks. Efficiency was estimated basically by the changes from baseline in the total and domain scores of the NIH Chronic Prostatitis Symptom Index (NIH-CPSI).

Results: All patients had ≥20 leucocytes in expressed prostatic secretion (EPS), all had no any microflora in EPS or ejaculate, but Chlamydia trachomatis was found by polymerase chain reaction in 9/25.7% patients in group1 and in 8/25.0% in group 2, and Ureaplasma urealiticum was found in 6/17.1% and 7/20.0% accordingly. The NIH-CPSI initial was 21.1 in group1 and 20.9 in group 2. In one month, after ending of the therapy the NIH-CPSI score decreased in the roxithromycin and ofloxacin groups to a similar degree – to 11.4 and 12.4 accordingly. In 3 months Chlamydia trachomatis was identified in group 1 in 5.7%, in group 2 – in 9.4%. The NIH-CPSI 12-week total scores were 11.8 in group 1 and 13.4 in group 2.

Conclusion: Roxithromycin showed similar or favorable effects on the improvement of symptoms compared to ofloxacin and was more effective against intracellular micro-organisms. Roxithromycin is recommended for the therapy patients with chronic prostatitis, especially accompanying with intra-cellular infection.

UP.190

Current Masks of Kidney Tuberculosis

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Introduction and Objectives: Urogenital tuberculosis (UGTB) is the second most common form of TB in countries with a severe epidemic situation and the third most common form in regions with low incidence of TB. Seventy seven percent of men who died from tuberculosis of all localizations had prostate tuberculosis which had mostly been overlooked during their life time. In actual figures, this means about 19,000 men yearly in Russia. The main reason for late diagnosis is an atypical clinical feature of UGTB, it courses under the mask of another disease.

Materials and Methods: We analyzed 816 history cases of UGTB patients to estimate clinical features.

Results: Most common complains were flank pain (68%), dysuria (48%) and renal colic (24%); among laboratory signs – pyuria (78%) and haematuria (34%). Patients were treated by urologists or GPs with misdiagnoses of pyelonephritis (27%), cystitis (43%), cancer (8%) or urolithiasis (22%) during 5.6 years on average. Positive smear was in 17% and positive culture of Mycobacterium tuberculosis was in 44%. There were 64% diagnosed in late complicated cavernous stage, when surgery is necessary – and 90% of operations were nephrectomy due to total involvement of kidney tissue.

Conclusions: Most common masks of UGTB are pyelonephritis, cystitis and urolithiasis. UGTB presents non-specific symptoms and laboratory findings, except for positive MBT culture, but only about 44% cases are culture-positive. This is one of the main reasons for late and poor diagnosis of UGTB. The significance of UGTB may be considerable when the high prevalence of overall TB and the asymptomatic nature of UGTB are taken into account.

UP.191

The Use of Tadalafil in Patients with Chronic Prostatitis/Chronic Pelvic Pain Syndrome

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Introduction and Objective: The treatment of chronic prostatitis/chronic pelvic pain syndrome (CP/CPPS) can be a frustrating challenge to physicians and many drugs had been used with variable results. Objective To evaluate the safety and the efficacy of adding 5 mg tadalafil for patients with CP/CPPS with the conventional treatment.

Materials and Methods: Twenty five patients received tamsulosin 0.2mg once daily, served as control group. Another 31 patients received the alpha blocker, as above with tadalafil 5 mg once daily for 1 month period comprised tadalafil group. The NIH Chronic Prostatitis Symptom Index (NIH-CPSI) assessment was completed by each patient at baseline and 4 weeks after the drug therapy to assess the response to treatment. We consider in our study the chronic prostatitis/CPPS or category IIIa or b according to NIH classification system.

Results: No significant difference in mean age and baseline score in between groups was found. After one month of starting treatment, it had been found that NIH-CPSI/pain, urinary and quality of life domains were significantly changed from (12.8±1.44, 5.9±1.77 and 8.8±1.82) at baseline to (9.6±1.04, 3.55±0.99 and 3.88±1.31) respectively in group A. In group B also there was a significant reduction in the NIH-CPSI among patients in this group; the baseline NIH-CPSI/pain, urinary and quality of life domains were (13.4±1.66, 5.8±1.85 and 9.3±1.92) and changed to (6.28±0.90, 2.65±0.86 and 2.69±1.43) respectively after treatment. The total NIH-CPSI was 27.5±4.78 and changed to 17.03±3.91 after treatment in group A and 28.5±4.49 changed to11.62±3.59 in group B.

Conclusion: The use of tadalafil in patients of CP/CPPS with conventional treatment for 1 month was safe and has high efficacy in reducing the symptoms for the patients and improving the quality of life.

UP.192

The Potential Impact of UTI Template-Guided Triage Decisions for Patients with Urinary Tract Infections

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Introduction and Objective: Current guidelines provide limited evidence as to which patients with urinary tract infection (UTI) require hospitalisation. We evaluated the currently used triage routine and tested whether a set of criteria including UTI template like ①plt ②BP ③Hydoronephrosis ④SIRS and ⑤Elapsed days have the potential to improve triage decisions.

Materials and Methods: Consecutive adults with UTI presenting to our emergency department (ED) were recruited and followed for 90 days. We defined five virtual triage algorithms, which included guideline-based clinical criteria, optimised admission ①plt ②BP ③Hydoronephrosis ④SIRS and ⑤Elapsed days in addition to a set of clinical criteria. We compared actual treatment sites and observed adverse events based on the physician judgment with the proportion of patients assigned to treatment sites according to the five virtual algorithms. Adverse outcome was defined as transfer to the intensive care unit (ICU), DIC, Septic shock, death, recurrence of UTI or rehospitalisation for any reason.

Results: We recruited 203 patients (age 61.8 years; 61% females) and analysed the data of 201 patients with a final diagnosis of UTI. Of these 201patients, 42 were treated as outpatients. Virtual triage based only on clinical signs would have treated only 42 patients as outpatients, with higher proportions of outpatients equally in both template groups (29.3 %; p = 0.02). There were no significant differences in adverse events between outpatients according to the very low risk (2.8 %), low risk (4.5%). The mean length of stay was 6.6 days, including 2.2 days after reaching medical stability.

Conclusions: Adding template to clinical criteria has the potential to improve risk-based triage without impairing safety. Current rates of admission and length of stay could be shortened in patients with UTI.

UP.193

Emphysematous Cystitis: Aggressive vs Conservative Novel Treatment

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Introduction and Objective: Emphysematous urinary tract infections are urinary tract infections (UTI) associated with gas formation. They can manifest as cystitis, pyelitis and pyelonephritis. Emphysematous cystitis (EC) is a rare entity characterized by a primary bladder infection gas producing pathogens. The objective is to report two cases of emphysematous cystitis, a rare but potentially serious condition.

Materials and Methods: Analysis of two different cases treated in our center and review of the literature.

Results: A radical cystectomy was practiced to the first patient due to the advanced condition; the second patient, benefited from a conservative novel treatment, two sessions of hyperbaric oxygen therapy.

Conclusions: Early diagnosis is the cornerstone of the conservative management. Hyperbaric oxigenoterpia may be beneficial due to the improvement in oxygenation of the tissues affected by the disease.

UP.194

Efficacy of Physical Therapy in the Treatment of Female Pelvic Pain

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Introduction and Objective: Female pelvic pain is poorly understood, often thought to arise from the bladder but in the Beaumont experience is more commonly from pelvic floor muscle dysfunction (PFMD). Pelvic floor physical therapy (PFPT) is first line treatment for PFMD. We hypothesize that PFPT will be an effective treatment for pelvic pain.

Materials and Methods: A retrospective chart review was performed for women with a primary diagnosis of pelvic pain who presented to a multidisciplinary clinic for PFPT in 2015. Data reviewed included pertinent history, initial and post-treatment scores for validated questionnaires [Pelvic Floor Distress Inventory Questionnaire (PFDI) and the Pelvic Floor Impact Questionnaire (PFIQ)], and patient-reported pain levels.

Results: Two undred and eight underwent PFPT for primary indication of pelvic pain in 2015. Mean age was 45 yr ± 15. Mean number of visits was 9.3 ± 6.7 and mean pain level decreased from 4.6 to 2.2 by the last visit ($p<0.0001$). Pre and post treatment PFDI and PFIQ questionnaires were completed by 90/208 (43%) and 88/208 (42%) women respectively. Table 1 shows the mean scores for each questionnaire and the minimally important difference (MID) for PFDI. PFDI, PFIQ, and pain scores improved significantly. PFDI did not meet the MID.

UP.194, Table 1. Summary of Questionnaire Data

Questionnaire	Intake	Discharge	Absolute change	MID	P value
PFDI	96	62	-33	-45	<0.0001
PFIQ	114	63	-51		<0.0001
Pain Score	4.9	3.0	-1.9		<0.0001

Conclusion: PFPT significantly improves validated pain scores in women presenting with pelvic pain.

UP.195

Comparison of Laboratory Diagnostic of Urogenital Trichomoniasis in Patients with Benign Prostatic Hyperplasia Complication of Acute Urinary Retention

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Introduction and Objective: We compare the effectiveness of polymerase chain reaction (PCR) and culture method in the diagnosis of urogenital trichomoniasis (UT) in patients with benign prostatic hyperplasia (BPH) with acute urinary retention.

Materials and Methods: Between 2014 and 2016 we involved 153 patients with BPH who underwent transvesical prostatectomy. Excreta from urethra, expressed prostatic secretion and intraoperatively removed prostate tissue were investigated. UT diagnosis was performed in 153 patients with PCR method, over culture method examined 84 patients.

Results: According to our research UT infected 38 (24.8%) patients. PCR was positive in 19 (12.4%) patients and Trichomonas vaginalis culture method identified 27 (32.1%) patients. In patients who underwent diagnostic UT over two methods, PCR was positive in 9 (10.7%) patients and only one patient outcome was not confirmed by culture.

Conclusion: Analysis of efficacy of diagnostic UT showed that Trichomonas vaginalis in patients with BPH with acute urinary retention 2.6 times more often detected by culture method in comparison with PCR. Thus, it can be argued that to improve UT diagnosis in these patients is necessary to use culture method.

UP.196

Analysis of the Result of Active Immunoprophylaxis against Uncomplicated Recurring Urinary Tract Infection in a Sample of 430 Patients

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Introduction and Objectives: Urinary tract infections (UTI) have a high prevalence and impact in quality of life.

The objective of this study is to analyse the response to active immunoprophylaxis with Uromune® by Q Pharma through sublingual route with 2 puffs daily on an empty stomach for 3 months in a sample of 430 patients along 51 months, from January 2012 to March 2016.

Materials and Methods: Four hundred and thirty patients had presented 3 or more UTI with positive urine culture in the 12 months prior to starting the treatment. Exclusion criteria were: ureteral lithiasis, renal lithiasis over 5mm, ureteral catheter, percutaneous nephrostomy, urinary diversion, moderate-severe urinary incontinence with 3 or more pads a day, severe benign prostatic hyperplasia and cystocele with postvoid residual higher than 150ml. Uromune® contains an inactivated bacterial cell suspension of selected strains of Escherichia coli, Klebsiella pneumoniae, Proteus vulgaris and Enteroccoccus faecalis. Age, sex, composition of the vaccination and number of UTIs with positive urine culture were analysed before starting treatment and 3 and 6 months after.

Results: The most frequent bacteria was E coli and the second K penumoniae. 80.9% were females. The average age was 71. The distribution of UTI before starting the treatment was: 3 UTIs in 29.8%, 4 in 31.2%, 5 in 24.4%, 6 in 9.5%, 7 in 3.7% and 8 in 0.4%. After 3 months: 0 UTIs in 45.6%, 1 in 27.7%, 2 in 21.6%, 3 in 4.9% and 4 in 0.2%. After 6 months: 0 ITUs in 34.4%, 1 in 33.3%, 2 in 20.5%, 3 in 10.9%, 4 in 0.7% and 5 in 0.2%.

Conclusions: The inmunoprophylaxis was well tolerated. Only 3 patients had dry mouth and 5 gastrointestinal discomforts. After 6 months, 45.6% of patients had 0 UTIs, after 3 months and 34.4%. After 3 months, 73.3 % had 0-1 UTIs and 67.7% after 6 months. Active immunoprophylaxis with Uromune® in the sample analysed shows a significant reduction in the number of positive urine cultures without encouraging antibacterial resistance.

UP.197

Fosfomycin Trometamol Concentrations in Central and Periferic Prostatic Tissue in Men with or Without Metabolic Abnormalities

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Introduction and Objective: Men with abnormal metabolic parameters have a higher risk to present more aggressive prostate cancers. Therefore, the need of an adequate biopsy sampling for these patients is mandatory, even if they are more at risk of post-biopsy complications, including infections. Fosfomycin trometamol (FT), is a bactericidal, broad-spectrum antibiotic with low profile of resistance and elevated activity against multidrug-resistant bacteria but the prostate tissue distribution is not well know. Aim of our prospective study is to compare the prostatic concentration of FT in men with different metabolic abnormalities.

Materials and Methods: FT was administered 3 to 6 hours before prostate biopsy, to 60 men with suspected prostate cancer: The concentrations of FT were determined on biopsy samples collected from 2 prostatic zones (central zone [C] and peripheral zone [P]): the

UP.197, Table 1.

		Central	Peripheral	Total
Blood pressure	Normal	9.02	7.35	8.15
	Pathologic	13.09	12.97	13.03
	pvalue	***0.032***	***0.008***	***0.010***
Glycaemia	Normal	10.04	9.16	9.57
	Pathologic	14.03	12.65	13.34
	pvalue	***0.033***	*0.080*	***0.037***
Triglycerides	Normal	11.29	10.44	10.87
	Pathologic	12.19	11.17	11.58
	pvalue	0.636	0.731	0.705
HDL-Cholesterol	Normal	11.5	10.59	11.01
	Pathologic	15.97	15.05	15.51
	pvalue	0.376	0.437	0.379
Waist Circumference	Normal	11.10	9.54	9.79
	Pathologic	16.27	14.32	15.29
	pvalue	***0.010***	*0.089*	***0.026***

arithmetic mean of C and P was considered as total prostatic concentration (T). Metabolic features, including waist circumference, blood pressure, glycaemia, HDL-Cholesterol and trigliceride was recorded from all men, and splitted into normal or pathologic values according to NCEP-ATPIII definitions. The differences in concentration of FT inside prostate (in zones: C, P and T) between men with or without abnormal metabolic parameters were analyzed by Anova.

Results: Thirty-one men (51.7%) enrolled in the study were hypertensive, 19 (31.7%) presented hyperglycemia, 21 (35%) had high levels of Triglycerides while 2 (3.3%) low levels of HDL-Cholesterol and 10 (16.7%) had a pathologic waist circumference. Mean concentrations of FT in C, P and T, according to the normal vs. abnormal metabolic features are reported in the table below.

Conclusion: Obese, hypertensive and hyperglycemic men present higher concentration of FT inside prostate after administration performed before a biopsy for suspected prostate cancer as compared to those with normal metabolic parameters. Therefore, in dysmetabolic men, FT can be considered an effective prophylaxis during prostate biopsy.

UP.198

Infectious Complications Post-Transrectal Prostate Needle Biopsy: New Prophylaxis Approach

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Introduction and Objective: Infection is a common and can be one of the most dangerous complications of transretal prostate needle biopsy (TRPB). Classically, the antimicrobial prophylaxis is based on oral fluoroquinolones (FQ) starting on the day before the procedure. Lately, an apparent increase in infectious complications has been seen, which reflects the increase in the FQ-resistant bacteria prevalence in intestinal flora. Many risk factors have been suggested, but recent antimicrobial use has the major impact. The addition of peri-procedural intramuscular (IM) gentamicin theoretically offers better antimicrobial spectrum coverage, without significantly increasing time spent on the procedure, without nephrotoxicity and without increasing selective antimicrobial pressure. This study aims to evaluate the impact of a novel antimicrobial prohylaxis scheme on the infectious complications of TRPB.

Materials and Methods: Between january'2015 and july'2016, patients submited to TRPB (n=433) with risk factors (defined by antimicrobial use in the last 6 months or presence of an indwelling vesical catheter) has been randomized and included in group A or B. Group A (n=46) had a standard oral FQ prophylaxis scheme (starting on the day before the procedure, for 3 days). Group B (n=26) did the same scheme plus gentamicin 180mg IM 20 minutes before the procedure. Patients without risk factors (group C, n=361) had the standard scheme. A statistical comparision between groups was performed to search for differences.

Results: Infectious complications rate was significantly different between groups with and without risk factors (1.1% vs 7.6%, p=0.006). The adittion of gentamicin to the antimicrobial scheme has allowed a decrease in infection rate (with a statistical trend toward significance, p=0,08).

Conclusion: Recent antimicrobial usage and presence of indwelling urinary cateter are risk factors for infectious complications after TRPB. The adoption of antimicrobial prophylaxis scheme based on FQ plus IM gentamicin 160mg appears to reduce the infection rate in this group of patients.

UP.198, Table 1. Descriptive Data and Comparative Analysis between Groups

	Group A (n=46)	Group B (n=26)	p	Group C (n=361)
Age (years)	63,4±6,4	66,1±6,0	0,10	65,8±7,2
TPBR (no. cores)	15,6±6,1	14,4±5,1	N.S.	13,4±3,9
Prostate volume (mL)	54,0±25,4	56,0±28,8	N.S.	50,3±25,1
Infectious complications	5 (11%)	0 (0%)	0,08	4 (1,1%)
Hospitalization	2 (4%)	0 (0%)	N.S.	1 (0,2%)

TRPB transretal prostate biopsy

UP.199

Malakoplakia of the Prostate as a Mimicker of Prostate Cancer on Prostate Health Index and MRI-Fusion Prostate Biopsy: A Case Report

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Introduction and Objective: Isolated malakoplakia of the prostate is a rare inflammatory condition that has been clinically mistaken for prostatic malignancies. The development of Prostate Imaging – Reporting And Data Systems (PI-RADS) classifications, and Prostate Health Index (PHI) has led to more accurate diagnosis of clinically significant disease and stratification of patients that may be at risk of Prostate Cancer.

Materials and Methods: We present a case of a 75 years old male who was on follow up with our hospital for elevated Prostate Specific Antigen (PSA). He was admitted for an episode of Urosepsis, which was treated with antibiotics and subsequently underwent further workup and was found to have a raised PHI, as well as a high PI-RADS classification and was later found to have malakoplakia based on histology of prostate tissue obtained during targeted MRI guided Fusion Prostate biopsy.

Results: To our understanding, this is the first case where a prostate lesion has been labelled as a PI-RADS 5 lesion, with elevated PHI that has subsequently been proven histologically to be malakoplakia.

Conclusion: An important possible confounder is the interval between the MRI and the episode of urosepsis and it is well known that Urosepsis can affect the PSA and MRI result. We present this case to highlight the potential for a false diagnosis of prostate cancer, in spite of laboratory and radiological findings.

UP.200

A Very Unusual Case of Renal Hydatid Cyst Presented as Post Labour Hydatiduria

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Introduction and Objective: Hydatid cyst is a parasitic disease that affects humans and other mammals. In human, it is caused by larval stage of E. Granulosus complex. Most common organs to involve with hydatid cyst are liver followed by lungs. Renal hydatid involvement is very rare in 2 to 3% of cases. There are very few cases of renal hydatid in literature. However, case with post labour hydatiduria is not reported so far.

Materials and Methods: Twenty-three years old female pt on full term for first gravid presented to gynecologist with chief complaints of left flank and suprapubic pain for 2 days which was considered as initiation of labour. So, induction of labour was conducted and patient delivered a full-term female child. One day after delivery she had complaints of passing grapes like small structures passing in urine (hydatiduria). Pt was investigated further after recovery of labour.

Results: All the routine investigations were normal. On USG abdomen, she had left cystic mass in kidney with daughter cysts possibility of hydatid cyst and mild hydroureteronephrosis. On CECT ABDOMEN pt had large 7*8*9 cm size well defined cystic lesion with internal daughter cysts. 6*3*8 cm size collection on left perinephreic space. On excretory phase contrast was seen within cystic lesion and in perinephreic collection along with filling defects in pelvis and moderate hydroureteronephrosis. We started albendazole 400mg once daily 1 week prior to surgery. We did cystoscopy with 1t RGP. On RGP there were multiple filling defects in PC system with extravasetion of contras from lower pole. We did laparoscopic cyst deroofing and scolicidal agent was (10% betadine) injected. Calyceal fistula repaired and DJ stent was kept. Pt was discharged on 3rd post-operative day.

Conclusion: Renal hydatid cyst are very rare. Most of the patients are asymptomatic. Passing of daughter cyst (hydatiduria) is diagnostic. Radiological diagnosis is established with CT Scan. In 75% cases, renal sparing surgery can be carried out. Preoperative albendazole decrease risk of spillage and anaphylaxis.

UP.201

Non-Antibacterial Therapy for Chronic Prostatitis Category 3-a

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Introduction: Chronic prostatitis (CP) is common urological disease, but results of its therapy are often poor. In the era of about total antibiotic resistance of micro-organisms non-antibiotic treatment may be preferable.

Materials and Methods: Twenty-four patients with CP category 3-a (abacterial with inflammation) were enrolled in the pilot open-label non-comparative prospective study. Average age was of 37.6 ± 2.4 years. Inclusion criteria - NIH-CPSI (National Institute of Health Chronic Prostatitis Symptom Index) score ≥15; quantity of leucocytes in expressed prostatic secretion (EPS) ≥15. All received a monotherapy with canephron 2 dragee three times a day for one month. Efficiency was estimated by dynamic of NIH-CPSI score as well as by laser Doppler flowmetry (LDF) exactly after therapy and in 3 months.

Results: Directly after finishing the course of the therapy all domains of NIH-CPSI decreased significantly: CPSI pain score from 8.9 to 6.3, CPSI voiding symptoms from 4.5 to 2.3, CPSI quality of life (QoL) score from 7.6 to 4.9, and total CPSI score from 21.0 to 13.5. Quantity of leucocytes in EPS ≥15 was in 34.8%. Perfusion units in a zone of a prostate evaluated by LDF improved on 24.7%. In 3 months quantity of leucocytes in EPS ≥15 was in 43.5% of patients, CPSI pain score on average was 3.4, CPSI urinary domain was 1.8, QoL – 2.9 and total CPSI score became 8.1; perfusion units increased to 36.4%.

Conclusion: Therapy with phytodrug canephron is effective for chronic prostatitis category III-a both by subjective (NIH-CPSI) and objective (LDF) criteria; follow up showed stable results for 3 months. We have found statistically significant ($p<0.05$) values improvement in all symptoms, as well as evident microvascular response.

UP.202

Laparoscopic Urachal Resection and Novel Umbilicoplasty Using Dermal Regenerative Grafts for Urachal Abscesses

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Introduction and Objectives: Omphalitis secondary to infected urachal remnants often necessitates simultaneous resection of umbilicus. This may cause a concern in cosmesis especially in younger patients. We report a simple reconstruction method using dermal regenerative grafts at the time of resection of urachal abscesses.

Materials and Methods: Between March 2014 and September 2016, 39 patients were referred to us with the complaints of infected urachal remnants. Laparoscopic urachal resection was conducted. After closure of the fascia, a 1 cm square of dermal regeneration sheet (Terudermis, Olympus) was suture-retained between the fascia and the umbilical skin. We took questionnaire about how much the patient is satisfied at first visit after operation.

Results: All surgical procedures were successfully completed. The mean total operating time was 150 minutes (range, 60-259). The mean blood loss was little. No serious intra- or perioperative complications were encountered. All patients were satisfied with the cosmetic result.

Conclusion: Novel umbilicoplasty using dermal regenerative grafts after the laparoscopic resection of infected urachal remnant and umbilicus offers a satisfactory cosmetic outcome.

UP.203

Is There a Role of Functional Imaging after Endoscopic Sclerotherapy in Chyluria Patients? A Prospective Study Using DMSA Renal Scan

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Introduction and Objective: Role of functional imaging before or after endoscopic renal pelvic instillation sclerotherapy (RPIS) is unclear. Radionuclide DMSA-renal scan gives information on differential renal function and also gives parenchymal images. To document any change in relative renal function and appearance of renal scar after RPIS, this prospective study was performed.

Materials and Methods: After Ethical Committee approval, all consenting participants with biochemically confirmed chyluria who underwent RPIS between November 2015 and September, 2016 were included. Patients with malignancy, pregnancy, medical renal disease, compromised renal function, uncontrolled diabetes, contrast allergy and incomplete follow-up were excluded. After obtaining baseline DMSA-renal scintigraphy, sclerosant (either 0.1%-povidine iodine or 1%-silver nitrate) was instilled 8-hourly on affected side. Patients received either 3-, 6- or 9-doses depending on response (clearance of chylous urine and patient's tolerance). DMSA-renal scan was repeated after 2-3 months of RPIS using the same protocol. Discrete variables were compared using Chi square test or Fischer's exact t-test. Continuous variables were compared using independent t-test or Mann-Whitney U-test. P value < 0.05 was considered as statistically significant.

Results: Of 34 patients, 22 were males with mean age 41.08±16.64 years. Mean followup was 8.94±3.70 months and overall success rate was 85%. Before RPIS, mean differential renal function on unaffected renal unit was 50.76±3.55% (range, 39.0%-57.0%) while that on affected renal unit (side of instillation) was 49.20±3.44% (range, 43.0%-61.0%). After instillation therapy, mean differential renal function of the normal side was 52.26±3.57% while that of affected renal unit was 47.50±3.56% (range, 41.0% - 54.0%). No patient had renal function changes of >5% from baseline. In two patients, post-instillation DMSA scan revealed a photopenic area at upper pole suggestive of scar. Complications were noted in 8 patients (either Clavein-Dindo grade I or II).

Conclusions: This is first study that explores the role of renal functional imaging following RPIS with DMSA scan. On short-term followup, we noticed that there was slightly decreased relative renal function in most (74%) patients (not clinically significant). However, renal function remained within normal range. Renal function was not affected by RPIS. More studies with larger patient numbers and follow-up are needed.

UP.204

Fournier's Gangrene: Academic Hospital Experience in West Java Province, Indonesia

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Introduction and Objective: Fournier's gangrene is a fulminant, life-threatening disease characterized by necrotizing fascitis of the perineal, genital and perianal region which can spread to the abdominal wall, causing soft-tissue necrosis and sepsis.

Materials and Methods: The patients who represented at the Hasan Sadikin Hospital Bandung from January 2011 to December 2015 were reviewed retrospectively from medical record and we analyzed patient's characteristics, age, length of hospital stay, etiology, mortality, surgical treatment and follow up patient.

Results: All the patients were male with mean age 53.04 years ± 16.33. Of these, 11 patients (21.15%) died during the treatment. The mean length of hospital stay was 31.25 ± 20.85 days. The most common predisposing factor was idiopathic in 22 cases (42.3%). One or more predisposing factors such as diabetes melitus 28.9% (15/52), perianal abscess 13.5% (7/52), urethral stricture 9.6% (5/52), urethral stone 3.8 % (2/52) and adeno carcinoma recti 1.9% (1/52). Reconstruction of fournier gangrene after necrotomy debridement were achieved with suture primer 55,7% (29/52), Split Thickness Skin Graft 27% (14/52) and flap suture 3.8% (2/52). We found 11 patients (13.5%) died after necrotomy and debridement surgical emergency procedure. Concomitant Medical Procedure was performed intraoperative surgery such as colostomy 5.8% (3/52), cystostomy 3.9% (2/52),

Conclusion: Mortality rate at Hasan Sadikin Hospital Bandung (Indonesia) is lower than others country with infectious rate similar Indonesia. Early recognition of infection associated with invasive and aggressive treatment is essential for attempting to reduce these prognostic indices. Keywords: Fournier's gangrene, Mortality, surgical debridement.

UP.205

Difficult Diagnosis of Epididymitis Orchitis Clinical Form: Idiopathic Xanthogranulomatous Epididymitis Orchitis (About 7 Cases)

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Introduction and Objective: Idiopathic xanthogranulomatous epididymitisorchitis (IXEO) is a rather benign testicular disease, constituting a rare and misleading form of testicular chronic inflammation.

Materials and Methods: We conducted a retrospective study of 7 cases of IXEO collected over a period of 24 years (1992 - 2016) in our urology department of the CHU Habib Bourguiba Sfax.

Results: The average age of our patients was 51 years. The left testicular affection was slightly predominant

and no case of bilateral IXEO was found. The IXEO represents 2.2% of all epididymitis orchitis monitored and treated in our departement in the same period. Our patients' clinical manifestations were dominated by epididymitis orchitis resistant to medical treatment (42.85%), spontaneous scrotal pain (71.42%) and scrotal swelling (42.85%). Physical examination of our patients was poor and revealed non-specific signs, dominated by Provoked scrotal pain (85.71%), a scrotal mass (42.85%) and the scrotum swelling in 42.85% cases. Scrotal ultrasound was performed for only two patients (28.57%). The curative treatment for the IXEO was based on antibiotherapy associated with orchidectomy: scrotal path first in acute and suppurative subacute forms and inguinal path first orchidectomy in pseudotumoral forms. The only case of focal epididymal involvement of our seriehas benefited of a conservative treatment after a surgical biopsy that has eliminated a malignant tumor process.

Conclusion: Given the lack of specificity of clinical, biological and radiological signs, the positive diagnosis of IXEO remains often histological. The prognosis of this condition is generally favorable and recurrence remains exceptional.

UP.206

Antibiotic Resistance for Pseudomonas Infections from Culture Positive Urinary Specimens from a University Hospital

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Introduction and Objective: To look at the trends of antibiotic resistance patterns for all Pseudomonas infections over a 3-year period in urine cultures between 2014-2016, and to assess whether there has been a change in the resistance to the commonly prescribed antibiotics for Pseudomonas infections over this time.

Materials and Methods: The department of infection collected results of organisms from urine culture (data collated and provided by Public Health England) over this period. Trends were obtained between urine culture positive samples. Resistance for Pseudomonas infections to commonly prescribed antibiotics including amikacin, tazocin, meropenam, ceftazidime and ciprofloxacin was collated.

Results: A total of 64,028 positive hospital urine specimens were collected in the 3-year period. Of which 1,986 of them were positive for Pseudomonas. Ciprofloxacin, one of the most commonly used antibiotics against Pseudomonas infections, has been increasingly less effective against Pseudomonas infections (resistance grew from 26.1% to 37.5%). There has also been an increasing resistance against Ceftazidime over the 3-year window, from 30% to 41.1%.

Conclusion: The trends have clearly shown an increasing need of prescribing second-line antibiotics for Pseudomonas infections, which may be of clinical value in guiding empirical treatment for Pseudomonas infections.

UP.207

A Cross-Sectional Study Focusing on the Occurrence of Clostridium Difficile Infections in Post-Cystectomy Patients

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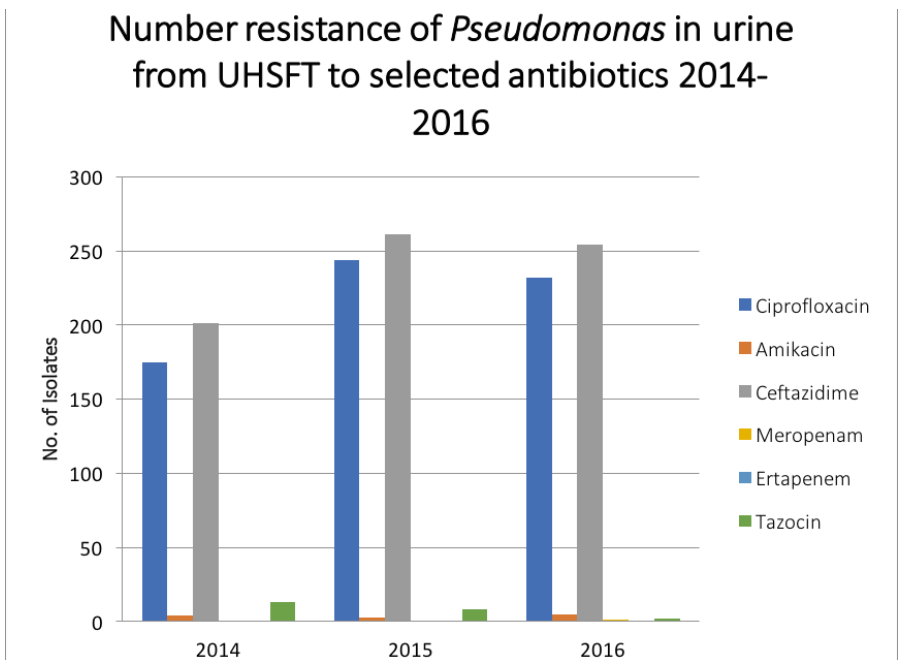
Introduction and Objective: Clostridium difficile (C. diff) is a significant cause of morbidity and mortality in hospitalised patients, frequently presenting with loose stools. Patients undergoing radical cystectomy (RC) for bladder cancer usually have a segment of small bowel used for urinary diversion. Small bowel recovery could lead to loose stools post-operatively in RC patients. Management of suspected C. diff involves isolation protocols that might necessitate patients to single rooms outside their parent ward. For RC patients, this could represent inadequate post-operative nursing care. This study analysed the incidence of C. diff infections in RC patients

Materials and Methods: A prospective database of cystectomy patients is maintained in our institution, collecting data on patient demographics, operative and pathological outcomes. Patients having Bristol stool grade 6-7 and symptoms suggestive of infective diarrhea post-operatively had stool samples sent for microbiological analysis. Anti-microbial use during the peri-operative course was reviewed.

Results: Between 2014 and 2016, 121 patients had RC. All patients had Bristol stool grade of 6-7 for their first post-operative bowel motion. Of these, 24 patients had stool samples analysed. Two were positive for C. diff (1 toxin and 1 screen). Viral PCR in all patients tested negative for norovirus and rotavirus. The toxin positive patient was treated with cephalexin for recurrent urinary tract infections (UTIs) 5 days prior to C. diff toxin positivity. Hospital rates of C. diff were 52 cases in 2014, 33 in 2015 and 35 in 2016.

Conclusion: A loose first bowel motion is an expected feature of early RC recovery. The detection rate in RC patients suspected of C. diff was low at 8.3%. Of all

UP.206, Figure 1.



UP.206, Table 1.

	2014	2015	2016	*Total*
Number of Pseudomonas Isolates	670	698	618	***1,986***
Amikacin	4 (0.60%)	3 (0.43%)	5 (0.81%)	***12 (0.60%)***
Ciprofloxacin	175 (26.1%)	244 (35.0%)	232 (37.5%)	***651 (32.8%)***
Ceftazidime	201 (30%)	261 (37.4%)	254 (41.1%)	***716 (36.1%)***
Meropenam	0 (0%)	0 (0%)	1 (0.16%)	***1 (0.05%)***
Tazocin	13 (1.94%)	8 (1.15%)	2 (0.32%)	***23 (1.16%)***

C. diff positive patients, only 1.7% of those were RC patients. As loose stool is an accepted post-operative occurrence in RC patients and the low incidence of C. diff infection, should we adjust the protocol by which we isolate post-RC patients with loose stools to allow for the expected loose motion post-operatively.

UP.208

Risk Factors for Recurrent Febrile Urinary Tract Infection in Urinary Stone Patients with Acute Obstructive Pyelonephritis within 1 Year

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introduction and Objective: To identify and evaluate the risk factors for the development of recurrent febrile urinary tract infection (fUTI) among former urinary stone patients with acute obstructive pyelonephritis (OPN).

Materials and Methods: We retrospectively reviewed the medical records of 52 patients, each of whom had urinary tract stones and presented with OPN within the 2010-2015 time period. Following their initial treatment, patients who were subsequently admitted to the departments of urology or nephrology via the emergency room within 1 year of their initial treatment were included.

Results: The mean age of patients was 62.2 ± 14.6 years, and the mean follow-up duration was 26.0 ± 20.39 months. E-coli was found to be the dominating organism (68.1%, 15/22) in the initial urine culture. After infection control and stone management, 23 patients showed recurrent fUTI during follow-up. Of them, 43.5% (10/23) patients developed a recurrence of fUTI and were re-admitted within 1 month after initial treatment. Patients were divided into two groups: a recurrent fUTI group (n=23), and a non-recurrent fUTI group (n=29). Between groups, significant differences were found with regards to diabetes history (47.8% vs. 17.2%, p=0.018), stone location (kidney, recurrent group: 63.0% vs. non-recurrent group: 24.0%, p=0.031) and initially positive urine culture (55.6% vs. 28.0%, p=0.016). In multivariate analysis, having an initially positive urine culture (p=0.040, 95% confidence interval (CI), 1.130-224.117) was identified as being an independent risk factor for developing recurrent fUTI. Of the recurrent fUTI group, 14 (60.9%) patients showed positive urine cultures which were newly diagnosed as being positive or were different from those found in the initial urine culture. In multivariate analysis, an initial laboratory test finding of acute renal insufficiency (ARI) at (p=0.019, 95% CI 1.375-36.157) and the presence of a kidney stone (p=0.022, 95% CI, 1.345-46.926) were significant factors associated with a newly-diagnosed-positive urine culture diagnosis.

Conclusions Having an initially positive urine culture was a significant risk factor for the development of recurrent fUTI in urinary stone patients with acute OPN. Additionally, cautionary management is also needed in patients found to have ARI or renal stones during follow-up.

UP.209

A Simple but Highly Effective Sample Preparation Method for DNA Extraction from Mycobacterium Tuberculosis and Its Application to the Molecular Diagnosis of Urinary Tuberculosis

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Introduction and Objective: Molecular diagnosis based on genomic amplification is a rapid method for the early detection of tuberculosis(TB) infection, which is limited by the quantity of nucleic acids from Mycobacterium tuberculosis (MTB). This limitation might result from i) the difficulty associated with disrupting the cell walls of the organism and ii) the low levels of MTB in certain clinical samples.

Materials and Methods: New sample-handling methods, employing the Dounce homogenizer, were compared to an established method using sodium hydroxide (NaOH), to isolate MTB DNA. Real-time quantitative PCR (RT-qPCR) was then used to evaluate DNA recovery, sensitivity and its specificity for TB diagnosis.

Results: Three hundred and ten suspicious TB patients were enrolled. Processing specimens with both the tight and loose pestles of the Dounce homogenizer recovered 300 -10,000 times more copies of MTB DNA than the NaOH method. Additionally, the Dounce methods offered greater detection of TB infections: 83.67-100% of those detected using the gold standard methods of culture oracid-fast bacillus smear. Although it initially appeared that this high sensitivity resulted in slightly reduced specificity (80.55-92.31%), it was shown that a number of apparent "false positives" were real TB infections by clinical standards. The new DNA extraction method also performed well in trace-samples: urine. Furthermore, of all the 310 suspected TB individuals, processing of samples with the Dounce homogenizer still achieved a sensitivity of 92.34% and specificity of 97.03%.

Conclusion: These results demonstrate that the Dounce homogenizer generates a high quantity and quality of MTB DNA for RT-qPCR analysis of urinary MTB infections.

UP.210

Polymorphisms in Aryl Hydrocarbon Receptor Gene Are Associated with Idiopathic Male Factor Infertility

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Introduction and Objectives: We wanted to determine whether genetic polymorphisms of aryl hydrocarbon receptor (AhR) gene are associated with susceptibility to male infertility.

Materials and Methods: This study comprised 176 men with idiopathic infertility and 352 healthy fertile men who served as controls. Seven single-nucleotide polymorphisms (SNPs) of the AhR gene (rs2066853, rs1476080, rs10250822, rs10247158, rs2282885, rs6960165, and rs7811989) were selected and genotyped by the polymerase chain reaction–restriction fragment length polymorphism analysis. The serum levels of reproductive and thyroid hormones and inhibin B were also measured.

Results: After multiple regression analysis, 2 of the 7 studied SNPs were significantly associated with the occurrence of male infertility. Men with rs2066853 AA genotype had 33% decreased risk of being infertile (odds ratio [OR] ¼ 0.67, 95% confidence interval [CI]: 0.46-0.87; P ¼ .003). The C allele of rs2282885 was significantly associated with infertility risk, with an OR of 2.14 (95% CI: 1.64-3.72) for heterozygotes and 3.54 (95% CI: 2.25–5.84) for homozygotes. When haplotypes were composed of 7 AhR SNP sites, patients with AACACAG haplotype harbored more than 75% decreased risk of being infertile (OR ¼ 0.21, 95% CI: 0.11-0.32; P ¼ .001). Conversely, carriers of the AACACGA haplotype had more than 12-fold increased risk of being infertile (OR ¼ 12.62, 95% CI: 2.77-52.74; P ¼ .00001).

Conclusions: Homozygosity for the rs2066853 A allele and rs2282885 C allele decreases and increases the risk of developing male infertility, respectively.

UP.211

The Effects of Opiate Consumption on Serum Reproductive Hormone Levels, Sperm Parameters, Seminal Plasma Antioxidant Capacity and Sperm DNA Integrity

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Introduction and Objectives: We evaluated the effects of opiate consumption on semen quality, sperm function, seminal plasma antioxidant capacity, and sperm DNA integrity.

Materials and Methods: A total of 142 opiate addict men (group 1) were enrolled in the study and 146 healthy age matched male volunteers (group 2) served as controls. Two semen analyses were performed in all participants. Sperm chromatin structure assay (SCSA) was used to identify sperm DNA integrity.

Results: The mean ± SD sperm concentration in opiate users and in control subjects was 22.2 ± 4.4 and 66.3 ± 8.3 million per ml, respectively (P = 0.002). A significant increase in the amount of fragmented DNA was found in opiate consumers compared with that in controls (36.4 ± 3.8% vs. 27.1 ± 2.4%, P = 0.004). Significantly decreased levels of catalase-like and superoxide dismutase-like (SOD) activity were observed in group 1 compared with group 2.

Conclusions: Opiate consumption has significant adverse effects on semen quality. In cases of unexplained

infertility in men, opium consumption should be considered as a possible factor.

UP.212

Evaluation of Immediate and Late Effects of Chronic Stress on Testes of Prepubertal and Adult Rats

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Introduction and Objectives: Although chronic stress is a common condition, its effects on testicular morphology and function are not well known. The aim of this study was to evaluate the immediate and late effects on sperm parameters and testicular morphology in prepubertal and adult rats submitted to chronic stress.

Materials and Methods: The prepubertal (4 weeks-old) and adult (10 weeks-old) animals were immobilized in a rigid cylinder, 2 hours daily, for 6 weeks, to simulate stress situation. Ten prepubertal and eight adult rats were killed 24 hours after the last stress session, for immediate evaluation, while ten prepubertal and nine adult rats were killed 6 weeks after the last stress session, for late evaluation. Other age-matched animals were used as controls (n=8). Spermatozoids collected during euthanasia were evaluated for concentration, motility and viability. Seminiferous tubule diameter, epithelial height and volumetric density of the tubular and intertubular compartments were analyzed in histological sections. Data were compared by the Student's-t-test and considered significant when $p<0.05$.

Results: No difference was observed in sperm parameters in the prepubertal group when compared to controls. However, the sperm motility decreased by 19%($p=0.012$) and viability by 46% ($p=0.0002$) in the adult group of immediate effects analysis. The sperm viability decreased by 24% ($p=0.0049$) in the adult group of late effects analysis (Figure 1). Seminiferous tubule diameter of the prepubertal and adult groups of immediate analysis showed a reduction of 4% ($p=0.0254$) and 6% ($p=0.013$), respectively. In the prepubertal group of late effects analysis, the density of tubular and intertubular compartments showed a decrease of 2% ($p=0.0027$) and increase of 18%($p=0.0027$), respectively (Figure 2).

Conclusions: Chronic stress caused morphological changes in testicles during prepubertal and adult age, nevertheless, spermatozoid alterations were observed only when it occurred during the adulthood. Hence, alterations promoted by chronic stress stimuli are more important in adult rats than in prepubertal animals.

UP.213

Y Chromosome Microdeletions and Hormonal Profiles of Azoospermic or Oligozoospermic Men Undergoing Assisted Reproductive Technologies

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Introduction and Objective: Y chromosome deletions (YCDs) in Azoospermia Factor (AZF) region are associated with abnormal spermatogenesis leading to azoospermia or severe oligozoospermia. Assisted Reproductive Technologies (ART) by Intracytoplasmic Sperm Injection (ICSI) mostly after Testicular sperm extraction (TESE) is required for their infertility management. To determine the frequency of YCD and the most frequent variant in infertile men who had ART in our center compared to a fertile group. Also, semen parameters, hormonal profiles and ART outcomes of the infertile group were studied.

Materials and Methods: There were 97 oligozoospermic or non-obstructive azoospermic (NOA) infertile men who had ART at Infertility center of Ghadir-Mother and Child Hospital as our case group that were compared to 100 fertile men as the control group. DNA was extracted from peripheral blood of all of them and tested for YCD by multiplex PCR of eight known Sequence-Tagged Sites (STSs).

Result: No YCD was detected in the control group. However, 20 out of 97 (20.6%) infertile men had YCD. AZFc deletion was detected in 15 out of the 20 (75 %), AZFbc in four (20 %) and AZFabc in one (5%) patient. No fertilization or clinical pregnancy was seen following ICSI in the group with YCD in this study. The mean level of FSH was significantly higher in the group with YCD (28.45±22.2) compared to the groups without YCD either with (4.8±3.17) or without Clinical pregnancies (10.83±7.23).

Conclusion: YCD has a relatively high frequency among oligozoospermic and NOA men. So YCD screening before ART and patient counseling is strongly suggested.

UP.214

Seminal Dysbiosis Is Associated with Low Seminal Quality in Varicocele Patients

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Introduction and Objective: Varicocele (VA) is the most commonly reported correctable cause of male infertility. However, the mechanism is still far from clear. Increasing evidence suggests that seminal microbiota might play an important role in seminal quality. Therefore, we want to know whether patients with varicocele have a changed seminal microbiota. To demonstrate whether the unbalanced seminal microbiome is associated with low seminal quality in patients with varicocele.

Materials and Methods: From October 2015 to May 2016, 31 VA patients (VA group) and 24 healthy volunteers (NS group), aged from 19 to 32 years, were enrolled. All the varicocele patients underwent microsurgical varicocelectomy. Semen and blood samples were collected before and at least 3 months after surgery. The seminal microbial community was investigated by Hiseq sequencing of the 16S ribosomal V3-4 region.

Results: Higher diversity and a distinct change in the seminal microbiome were found in patients with varicocele. Compared with normal volunteers, varicocele patients had more phylum Bacteroidetes and Firmicutes ($p<0.05$) and less Proteobaceria ($p<0.05$). Several orders and genera, such as Clostridiales(order), Pseudomonadales(order), Corynebactriales (order), Anaerococcus (genera) and Pseudomonas (genera), which might be related with inflammation, were significantly increased in seminal fluids of varicocele patients. The seminal microbial flora had a significant correlation with the semen parameters, the width of spermatic vein and hormones. Twenty-two varicocele patients with poor seminal quality had altered seminal microbiome compared with both 9 varicocele patients with normal seminal quality and healthy individuals. Interestingly, the seminal microbial flora had a trend to normal status along with an improvement of the semen parameters after surgery in varicocele patients with asthenospermia.

Conclusion: Seminal dysbiosis was found in varicocele patients, which could be a novel mechanism for low seminal quality caused by varicocele.

UP.215

Decreased Semen Quality in Iranian Population: 22 Years of Experience

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Introduction and Objective: In the literature, there are inconsistent reports about the over-time changes in semen quality from long ago. In this article, we have reviewed the semen quality changes in Iranian population during past 2 decades.

Materials and Methods: During 20 years between 1990 and 2012, through a retrospective study, the records of more than 15000 patients have been reviewed. After epidemiologic consult, three consecutive years in each decade has been chosen as group 1 to 3 and the patients have been selected (1992-1994 as group 1, 2000-2002 as group 2, and 2010-2012 as group 3). Based on similar study, our inclusion criteria were the men younger than 55 years old with sperm count more than 20 million/ml and semen volume more than 1.5 cc (normal semen parameters based on WHO criteria). Sperm morphology and motility have been assessed according to WHO criteria.

Results: Although the changes of sperm count were not significant, the mean percentage of rapid progressive spermatozoa in three groups decreased significantly from 39.22 to 30.24 and then 31.12 percent. In contrast mean percentage of slow progressive sperm increased from 21.69 to 29.79 and then 30.47 percent and the percent of immotile spermatozoa has not been changed significantly. Sperm morphology has the most impressive result, in which the percent of spermatozoa with normal morphology dramatically decreased from 62.18 in group 1 to 51.28 in group 2 and 44.37 percent in group 3.

Conclusion: We have shown that semen quality of Iranian population has been decreased in the last 20

UP.214, Table 1. Demographic, Anthropometrics and Laboratory Data of the Study Cohorts

Variables	VA (N=31)	NS (N=24)	*P-value*
Physical appearance			
Age, years	27.00 (21.50-29.00)	25.50(19.00-32.00)	0.95
Body mass index, kg/m^2	21.20(19.19-23.22)	20.37(18.30-23.38)	0.053
Waist circumference, cm	87.00(84.00-91.75)	77.50(72.50-85.00)	0.054
Hip circumference, cm	96.00(94.75-100.00)	96.00(91.00-97.00)	0.057
Waist-to-hip ratio	0.91(0.89-0.92)	0.87(0.80- 0.89)	0.056
Lifestyle			
Smoker	3 (9.68%)	2 (8.33%)	0.076
Alcoholic consumption	5 (16.13%)	4 (16.67%)	0.85
Ejaculation abstinence, h	78.00(69.00-98.00)	86 (73.00-102.00)	0.056
Prevalence of			
Varicocele, grade1/2/3	3/5/23	-	-
Bilateral Varicocele	3	-	-
Unilateral left-side Varicocele	29	-	-
Spermatic vein, maximum diameter, cm	3.20(2.80-5.20)	1.80(1.20-2.60)	0.001
Semen volume, ml	4.20(2.1-7.30)	4.60(2.00-7.40)	0.078
Semen PH	7.10(5.5-7.80)	7.40(6.80-8.00)	0.002
Sperm parameters			
Sperm concentration, million/ml	45.50(3.32-160.35)	95.10(50.20-268.00)	<0.001
Total sperm count, million	100.20(28.40-614.30)	278.20(200.40-804.00)	<0.001
Total normal spermatozoa, %	20.00(0-60.30)	59.00(46.00-77.30)	<0.001
Progressive motile(A+B), %	20.30(0-67.10)	59.00(49.60-78.20)	<0.001
Sexual hormone levels			
FSH, mIU/ml	3.70(2.80-8.30)	4.50(3.10-8.00)	0.042
Testosterone, ng/dl	382.80(263.40-858.70)	493.30(352.20-832.30)	0.061
Diagnosed as having			
Inguinal hernia	6 (19.35%)	5 (20.83%)	0.34
Epididymis cyst	4 (12.90%)	3 (12.50%)	0.54
Asthenospermia	22 (70.97%)	0	<0.001

Note: Data are expressed as the mean(SEM.) or median (IQR, interquartile range). VA: Varicocele; NS: normal semen controls; BMI: Body Mass Index; FSH: Follicle Stimulating Hormone

UP.214, Table 2. Semen Parameters of Patients with Varicocele before and after Surgery (N=22)

Variables	VA-Before surgery	VA- After surgery	*P-value*
Spermatic vein, maximum diameter, cm	3.4(2.3-5.1)	1.6(1.0-2.0)	0.001
Semen volume, ml	3.7(2.1-7.3)	4.6(2.0-7.4)	0.078
Semen PH	7.1(6.4-7.8)	7.2(6.9-8.0)	0.09
Sperm parameters			
Sperm concentration, million/ml	25.6(3.32-131.25)	75.1(50.2-235.0)	<0.001
Total sperm count, million	67.2(28.4-614.3)	178.2(100.4-704.0)	<0.001
Total normal spermatozoa, %	19.5(0-40.3)	40.0(46.0-77.3)	<0.001
Progressive motile(A+B), %	14.3(0-46.1)	29.0(49.6-78.2)	<0.001

Note: Data are expressed as the median (IQR, interquartile range). VA: Varicocele

years. These results and their probable causes should be confirmed with further studies among general population.

UP.216

Role of Antibiotic in the Treatment of Semen Hyperviscosity: A Single Institution Study

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Introduction and Objective: The prevalence of semen hyperviscosity is estimated to be between 12-29% and can lead to male factor infertility both *in vivo* and *in vitro*. Semen is composed of fluids secreted by the male accessory glands, which contain proteins essential to the coagulation and liquefaction of semen. Hypofunction of the prostate or seminal vesicles causes abnormal viscosity of seminal fluid. Hyperviscosity can impair normal sperm movement in the female reproductive tract, and can lead to decreased sperm count. Multiple factors have been predicated which result in the development of Semen hyperviscosity, of this infection is considered to be one of the main contributor. Aim of the study was to predict the effect of antibiotic in the treatment of hyperviscosity.

Materials and Methods: This is a single institution study, 80 patients (age range 21-41 years) were recruited who were diagnosed with semen hyperviscosity (failure to liquefy after 30min). Medical, sexual, and family history were documented. All the patients semen were kept for culture and they all got levofloxacin for 14 days and patient who had positive culture were changed to appropriate antibiotics. All the patients underwent repeat semen analysis after 3 weeks.

Results: The percentage of patients that had previous history of prostatitis is 77%, 12% patient had past history of Sexual transmitted diseases and 75% patient are suffering from infertility, of this 7% patient had a family history. The percentage of patients with positive culture was 37% and of this only 10% patient had liquefaction post treatment. Culture negative patients, 40% patient had liquefaction post treatment.

Conclusions: Semen hyperviscosity is associated with infertility and exact cause is considered to be multifactorial, of this infection is considered to be the main factor. In our study, we did found that most of the patients has infection but antibiotic treatment even for culture positive patients showed minimal effect. Treatment with antibiotic along to treat hyperviscosity cannot be considered curative since in our study the effect was only 30%. Further research is needed to better understand the contributors to semen hyperviscosity and the treatments that can be used for infertile males with hyperviscous semen.

UP.217

Prospective Analysis of Factors Predicting Feasibility and Success of Longitudinal Intussusception Vasoepididymostomy in Men with Idiopathic Obstructive Azoospermia

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Introduction and Objective: Vasoepididymostomy (VE) for idiopathic obstructive azoospermia is often not technically feasible due to non-reconstructable obstructions, possibly due to inflammation involving the entire epididymis. Further, not all VEs are successful. Epididymal distension measured on an ultrasound may indicate a discrete, distal obstruction, amenable to reconstruction. We prospectively evaluated the ability of scrotal ultrasound to predict the ability to perform a VE and evaluated factors that could predict a patent anastomosis following VE.

UP.217, Table 1. Ultrasound Parameters as Predictors of VE

Parameter	Exploration only (N=15)	VE performed (N=19)	P value
Right testis			
Volume (mL)	14.4±2.5	16.4±3.2	0.06
Caput epididymis length (mm)	9.5±2.6	9.8±1.4	0.7
Corpus epididymis length (mm)	2.6±0.6	2.6±0.4	0.8
Left testis			
Volume (mL)	14.5±2.4	15.0±4.3	0.7
Caput epididymis length (mm)	8.8±1.5	9.6±1.8	0.18
Corpus epididymis length (mm)	2.6±0.6	2.7±0.6	0.38

UP.217, Table 2. Comparison between Groups with a Successful (Patent) Anastomosis and Failure

Parameter	Success (N=6)	Failure (N=13)	P value
Mean age (years, range)	30.8 (22-38)	31.0 (23-37)	0.8
FSH (mIU/mL, mean ± standard deviation)	3.8±1.1	3.33±1.7	0.49
Right testis			
Volume (mL)	15.0±1.2	17.1±3.6	0.21
Caput epididymis length (mm)	9.7±1.1	9.8±1.6	0.9
Corpus epididymis length (mm)	2.8±0.5	2.5±0.4	0.2
Left testis			
Volume (mL)	14.0±1.7	15.5±5.1	0.48
Caput epididymis length (mm)	10.5±2.7	9.4±2.1	0.4
Corpus epididymis length (mm)	2.7±0.6	2.7±0.7	0.9
Sperm motility in epididymal fluid			
Motile spermatozoa	1	5	0.003
Non-motile spermatozoa	5	1	
Absent spermatozoa	7	0	
Epididymal distension on inspection			
Distended	4	2	0.58
Normal	9	4	
Collapsed	0	0	
Site of anastomosis			
Caput epididymis	11	2	0.09
Corpus epididymis	2	3	
Surgeon's satisfaction with anastomosis			
High (3/3)	7	5	0.33
Moderate (2/3)	6	1	
Low (1/3)	0	0	
Anastomosis technique			
Single tubule	8	5	0.6
Multiple tubule	5	1	

Materials and Methods: In an IRB approved prospective cohort study, men diagnosed with idiopathic obstructive azoospermia, scheduled for a longitudinal intussusception VE underwent a scrotal ultrasound measurement of testicular and epididymal dimensions. During surgery, site and type of anastomosis, presence of sperms in the epididymal fluid and technical satisfaction with the anastomosis were recorded. All men where VE could be performed were followed up for appearance of sperms in the ejaculate.

Results: Thirty-four patients were included in the study and a VE was possible in only 19 (55%) of them while the remaining were abandoned. Of these 19, 6 had a patent anastomosis with one pregnancy. Preoperative ultrasound measurements could not identify patients where a VE could not be performed (table 1). Motile sperm in the epididymal fluid was the only significant predictor of a successful anastomosis (table 2).

Conclusion: Fourty five percent men planned for a VE for idiopathic obstructive azoospermia could not be reconstructed. Ultrasound assessment of testicular and epididymal dimensions could not predict the feasibility of performing a VE. The presence of motile sperms in the epididymal fluid was the only significant predictor a patent VE.

UP.218

The Effects of Microsurgical Varicocelectomy on Sperm Function Test

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Introduction and Objective: It has been shown that varicocele may have deleterious effect on male fertility. Varicocele induced sperm DNA damage may play role in this phenomenon. These damages seem to be reversible after microsurgical varicocelectomy based on numerous reports worldwide. In this study, we have reported the positive effects of microsurgical varicocelectomy on sperm DNA damage in our institute.

Materials and Methods: Between January 2015 and January 2016, 30 patients with left side varicocele were entered to our study (24 to 34 years old with mean age of 28.75 years). Of those, 16% had grade 1, 44% had grade 2 and the remain had grade 3 clinical varicocele. Semen analysis and chromatin study (aniline blue, toluidine blue, chromomycin A3 and TUNEL test) has been performed before and 3 months after microsurgical varicocelectomy.

Results: After microsurgical varicocelectomy Percentage of sperm with chromatin abnormality decreased significantly in Aniline blue stain (52.3% to 42.3%), toluidine blue stain (65.3% to 46.2%), chromomycin A3 (34.1% to 28.1%). In addition, percentage of sperm apoptosis which has been evaluated through TUNEL test also showed significant improvement (15.33% to 11.67%). Semen volume and percentage of sperm with normal morphology increased significantly after surgery (volume from 3cc to 5.66cc and normal morphology from 37.31% to 47.81%). Changes in sperm count and sperm motility before and after surgery were not statistically significant.

Conclusion: Although varicocele may have negative effects on semen quality and sperm chromatin structure, these effects seems to be reversible. We show that with microsurgical varicocelectomy significant improvement can be obtained in semen parameters and sperm chromatin damage.

UP.219

The Effect of Nifedipine to the Germ Cell Epithelial Apoptosis, Spermatogonium and Spermatogenesis in Ipsilateral Testicle of White Wistar Strain Rats with Unilateral Testicular Torsion

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Introduction and Objective: To determine the effect of nifedipine before detorsion against germinal epithelial cell apoptosis, spermatogonia and spermatogenesis in the ipsilateral testicle with unilateral testicular torsion

Materials and Methods: Thirty Wistar strain rats were randomly divided into 5 groups, each group consisting of 6 rats. Negative control group underwent sham surgery and then retrieved his left testicle. On the positive control group performed left testicular torsion 3x360° medially for 4 hours and 10 hours and after reperfusion phase for 4 hours left testicle is taken. Treatment group get the same surgical treatment with the positive control group, nifedipine (100 mcg / kg) was administered intraperitoneally 30 minutes before detorsion. Apoptosis was observed by TUNEL staining assay, spermatogonia and Johnson score to assess spermatogenesis was observed by hematoxylin eosin staining.

Results: Unilateral testicular torsion-detorsion will cause significantly increased apoptotic cells followed by reduction the number of spermatogonia and Johnson scores on the ipsilateral testis, and it is positively correlated with the length of testicular torsion. Giving nifedipine before detorsion will cause a decreasing apoptotic cell with an increasing number of spermatogonia and Johnson scores than the positive control group either 4 hours or 10 hours testicular torsion. In the treatment group of 10 hours testicular torsion with the addition of nifedipine have a similar result to the positive control group of 4 hours testicel torsion.

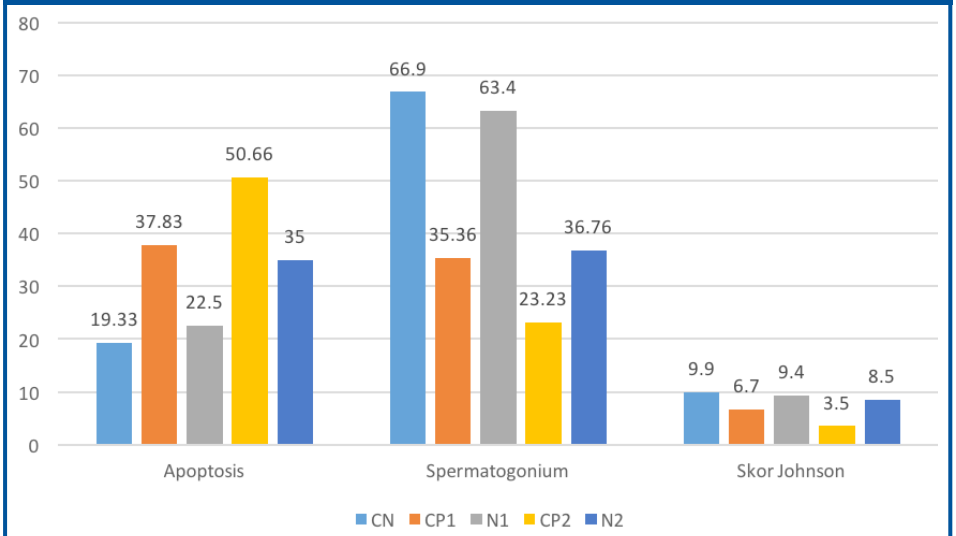
Conclusions: Nifedipine can decrease the amount of apoptosis, increasing the number of spermatogonia and score Johnson in ipsilateral testicle with unilateral testicular torsion.

UP.219, Table 1. Comparison Number of Apoptosis, Spermatogonia and Scores Johnson in Between Group

No	Group	Mean ± SD		
		Apoptosis	Spermatogonium	Skor Johnson
1	Negative control	19,33±6,186	66,9±2,46	9,9±0,1
2	Positive control torsion 4 hours	37,83±11,8*#	35,36±0,69*#	6,7±0,15*#
3	Group 4 hours of torsion plus nifedipine	22,5±4,72*#+	63,4±0,56*#+	9,4±0,16 #+
4	Positive control 10 hours of torsion	50,66±6,18*#	23,23±3,17*#	3,5±0,48*#
5	Group 10 hours of torsion plus nifedipine	35±7,07*+	36,76±1,41*+	8,5±0,20*#+

Description: *: significant difference compared to the negative control; #: Significant difference compared to the positive control 4 hours of testicular torsion; +: Significantly different compared with positive controls 10 hours testicular torsion.

UP.219, Figure 1. Comparison Number of Apoptosis, Spermatogonia and Johnson Score between Groups



CN: Negative control
CP1: Positive control 4 hours testicular torsion
CP2: Positive control 10 hours testicular torsion
N1: The treatment group 4 hours testicle torsion with addition of nifedipine half an hour before detorsion
N2: The treatment group 10 hours testicle torsion with addition of nifedipine half an hour before detorsion

UP.220

The Effect of Tamoxifen on Spermatogenesis in Non-Obstructive Azoospermic Patients with High Serum Estradiol Level

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Introduction and Objective: Various serum hormonal tests as predictive markers of biopsies in non-obstructive azoospermic (NOA) patients have been investigated.

We conducted this study to evaluate improvement of spermatogenesis in patients with NOA and high serum estradiol level who took tamoxifen.

Materials and Methods: Forty-four infertile men with NOA who were referred to the Infertility and Andrology Clinic from February 2013 till April 2016were participated in this cohort study. According to serum estradiol level, they divided in two groups (in each group N=22); Group A: Patients with normal estradiol level (mean ± SD: 34.1 ± 6.2 pg/ml, range: 24-43 pg/ml) and Group B :Patients with high estradiol level (mean ± SD: 65.3 ± 5.5 pg/ml, range: 56-75 pg/ml).

Serum FSH, LH and Testostrone were normal. These patients had hypospermatogenesis or maturation arrest at the level of spermatocytes and spermatids. Patients with Sertoli cell-only and those had received chemotherapy or radiotherapy were excluded from the study. Tamoxifen was administered 20mg every day for 8 weeks and thereafter evaluation of spermatogenesis with semen analysis and testis biopsy was done.

Results: All the patients completed the study without any significant Drug side effects.

Two patients of Group A (9.1%) and four patients of Group B (18.2%) demonstrated sperm in their semen analysis(S/A) (P=0.664). In those remaining azoospermic, testicular biopsy was done including 20 patients in group A and 18 patients in group B. Mature Sperms on surgical extraction were detected in two patients in Group A (10 %) and six patients in Group B (33.33 %). The difference was not statistically significant (P=0.117). The rest of the patients did not have any change in their samples.

Conclusion: Based on our results, higher rate of spermatogenesis was observed in patients with higher level of estradiol. Although the difference was not statistically significant, it might be due to small sample size and larger studies are required to better evaluation of the predictive role of serum estradiol as a hormonal test on spermatogenesis in patients with non-obstructive azoospermia who are receiving Tamoxifen.

UP.221

The Role of Natural Antioxidents in Improving Semen Quality in Infertile Men

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Introduction and Objective: Assisted Reproductive Technique (ART) is the last resort in the treatment paradigm of idiopathic male infertility (IMI). However, recent findings on the role of the oxidative stresses in the pathogenesis of IMI have highlighted the therapeutic potential of antioxidents in IMI. In this trial, we investigated the effects of Grape Seed Extract (GSE) with the contents of Proanthocyanidine and Transresveratol antioxidants on semen quality.

Materials and Methods: In this double blind RCT conducted from November 2014 till March 2016, 57 patients (29 in intervention and 28 in placebo group) with IMI were administered GSE and placebo 300 mg twice daily for three months. The effect of GSE on semen parameters, level of antioxidents; including Catalase and Superoxide Dismutase (SOD), level of Malondialdehayde (MDA); as an oxidant level indicator, and the hormonal profile including FSH, LH and Testosterone levels were measured and analyzed.

Results: In the intervention group, a significant increase in grade B sperm motility (15.9% ± 8.4 vs. 21.4% ± 12.2) and a decline of non-motile sperms (72.3% ± 10.7 vs. 63.6% ± 19.6) were observed. Furthermore, the level of Catalase increased significantly (44.6 ± 17.1 vs. 53.05 ± 18.6). MDA level decreased significantly (1.77 ± 0.48 vs 1.55 ± 0.43), however, SOD level did not change. Although FSH rose considerably in the intervention group (3.53 ± 1.51 vs. 4.3 ± 2.0), no significant difference was found in the levels of Testosterone and LH. In the placebo group, no differences were found in any of the investigated parameters.

Conclusion: Our study showed a significant efficacy of GSE on improvement of semen quality and rising FSH level in patients with IMI. This seemingly cost-effective treatment modality not only would increase the fertility rate but also may improve the ART outcomes as well.

UP.222

Spontaneous Pregnancy and Delivery Rates after Embolization of Clinical Varicocele in Subfertil Couples

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Introduction and Objective: Varicocele is a well-recognized cause of decreased testicular function and occurs in approximately 15-20% of all males and in 40% of infertile males, being the most common cause of male infertility. Although its correction can improve abnormal semen parameters, it is still debatable if it improves the odds of spontaneous pregnancy. The aim of this study is to evaluate the spontaneous pregnancy rate, the need to resort to medically assisted reproduction techniques and the birth rate in a population of infertile patients who were submitted to percutaneous embolization of clinical varicocele.

Materials and Methods: Prospective evaluation of a population of 320 infertile men, followed in the Department of Reproductive Medicine of Coimbra University Centre, who were submitted to percutaneous embolization of clinical varicocele between January of 2007 and March of 2016. The need of assisted reproduction techniques, spontaneous pregnancy and birth rates were recorded and evaluated. Statistical analysis was performed using IBM SPSS V.22.0

Results: After performance of the varicocele percutaneous embolization, and without accounting for the semen parameters, 42% of the couples resorted to assisted reproduction techniques. The overall pregnancy rate was 47% (52.4% were spontaneous and 47.6% occurred after assisted reproduction techniques). On average, the first pregnancy occurred 17.54±14.4 months after the percutaneous procedure. 55.7% of the pregnancies occurred in the first 12 months after the treatment. The time between embolization and spontaneous pregnancy or pregnancy after assisted reproduction techniques is not significantly different ($p>0.05$). Of these pregnancies, 83% resulted in delivery, mostly of a single newborn (81%). The patients that had higher mobility rates before the procedure had higher odds of pregnancy ($p=0.031$). Couples with men with higher sperm concentration after the embolization had also higher pregnancy rates ($p=0.012$).

Conclusion: The improvement of semen parameters after percutaneous embolization of clinical varicocele in a population of infertile men is correlated with higher odds of pregnancy after a short period of time (average < 18 months). A significant portion of the couples were able to achieve a spontaneous pregnancy.

UP.223

Assisted Reproductive Technologies in Patients with Macrozoospermia: The Experience of the Medical University of Sfax

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UR17ES36 Genomics of Signalopathies in the Service of Medicine, Medical University of Sfax, Sfax, Tunisia; Sfax University, Ministry of Higher Education and Scientific Research Tunisia, Sfax, Tunisia

Introduction and Objective: Macrozoospermia that accounts for less than 1 % of cases of severe male infertility is characterized by a high proportion of abnormal spermatozoa with enlarged heads and multiple flagella and a genetic common cause which is AURKC microdeletion. Although many publications have reported failure to conceive in couples with macrozoospermia, a few others have described successful pregnancies, thus raising question as to whether intra-couple assisted reproductive technologies should be avoided in men with macrozoospermie. Here, we report on assisted reproductive technology (ART) strategies and outcomes for macrozoospermic men who were seen at our genetic counselling at the Medical University of Sfax for 7 years.

Materials and Methods: Between 2005 and 2012, a total of 14 patients were seen at our genetic counselling because of severe male infertility related to male large headed and multiple flagella spermatozoa.

Results: Among our 14 couples, six (43%) have been enrolled in a program of intra-couple ART and have been referred to us after at least one failed attempt. The total number of cycles was 22 with a mean of 3.6% cycle per couple. ART programs included intra-uterine insemination (IUI) for 4 couples (67%), *in vitro* fertilization (IVF) for one couple, intra-cytoplasmic sperm injection (ICSI) for 3 couples and Intracytoplasmic morphologically selected sperm injection (IMSI) for one couple. ART failures were reported in 100% of cases secondary to fertilization or implantation failures or developmental failure. Indeed, fertilization was obtained in 4 couples 67%. The embryos obtained by (IVF or ICSI) and their transfers in the fresh or frozen state were reported for three couples. However, no pregnancy was obtained for these three couples with negative HCG levels following implantation failures. Nevertheless, obtaining a pregnancy following an IUI was reported for the 4th couple, unfortunately an early spontaneous foetal loss occurring at the 10th week of development ended the pregnancy. The remaining 33% of couples, there was no fertilization, both by IUI and ICSI.

Conclusion: Screening for the homozygous c.144delC mutation in AURKC gene and a referral for genetics counselling are recommended for macrozoospermic men before ART program choice.

UP.224

Nomogram to Predict the Outcomes of Intracytoplasmic Sperm Injection (ICSI)

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Introduction and Objective: Although many studies have shown that the success of ICSI depends on a number of male factors, female factors and laboratory procedures, no one has analyzed these variables collectively. The aim of our study was to create a nomogram capable of predicting the outcome of ICSI based on all important available clinical and laboratory prognostic variables.

Materials and Methods: We prospectively analyzed 1112 ICSI cycles performed for male or female infertility. We used multiple factors to build the first nomogram to predict the probability of clinical pregnancy of ICSI. All ICSI procedures were performed in the same institute using the same technique and the same operators. Eleven variables (male factors, female factor, and laboratory factors) were included in a multiple logistic regression analysis. The final nomogram was internally validated with bootstrap analysis.

Results: Nearly half of the cycles (n=549, 49%) resulted in a clinical pregnancy. The female patients who became pregnant were young (median age = 26 years), had a healthy BMI (median = 28), and had a median infertility duration of 5 years. Most of the sperm used in the ICSI cycles came from ejaculation (64.7%). Multiple logistic regression analysis was conducted to study the predictability of clinical pregnancy. Prognostic variables included; 5 male factors (infertility duration, testicular grade, fresh/frozen, sperm source and percent of abnormal forms) and 6 female factors (age, BMI, smoking, infertility duration, number of good embryos, and transfer day) were considered. Restricted cubic splines were applied to numeric or ordinal variables to accommodate potential non-linear associations. The final nomogram was built from the logistic model with the 11 selected predictors. The model discrimination was quantified by a concordance index (CI), which is equal to the non-parametric area under the Receiver operating characteristic (ROC) curve and represents the probability that for a randomly selected pair of cases, the one with clinical pregnancy would have a higher predicted probability of being clinically pregnant than the other without clinical pregnancy. The CI ranges from 0.5 to 1 with 0.5 indicating no discrimination ability and 1 representing perfect separation of patients with different outcomes. In addition, calibration was assessed graphically by plotting the observed against the predicted probability. Bootstrap analysis with 1000 resamples was used to correct over-fitting bias in the internal validation. All statistical analyses and plotting were performed using R version 2.12.2 (2011-02-25 R Development Core Team) with Hmisc and Design packages added. An alpha level of 0.05 was used. Based on this data, a nomogram was constructed to predict the outcome of ICSI (Figure 1). The nomogram was internally validated with bootstrapping and achieved a concordance index (CI) of 0.652.

Conclusions: We constructed the first nomogram that is accurate to predict the probability of clinical pregnancy of ICSI. We believe that this tool will help physicians more accurately predict the chances of pregnancy for an infertile couple given the cost and the emotional stress associated with this procedure.

UP.225

Efficacy of Application of Vitamin C as an Antioxidant in Improvement of Sperm Parameters following Varicocelectomy Surgery

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Introduction and Objective: Varicocele has been associated with the presence of oxidative stress in seminal fluid, and both the levels of oxidative stress and of sperm damage seem to be related to the grade of varicocele. The aim of this study is to evaluate efficacy of application of vitamin C, as an antioxidant in improvement of sperm parameters following varicocelectomy surgery.

Materials and Methods: In a prospective, controlled, randomized study, 120 patients with varicocele that were referred to Urmia Imam Khomeini Hospital for varicocelectomy were enrolled. After obtaining the demographic information of patients, sperm parameters were collected from patients before surgery. After surgery, patients were randomly divided into two groups. The participants in the case group were provided with a 250 mg vitamin C tablets twice daily for 3 months and in the same time the control group did not receive any treatment.

Results: Mean age of participants in case group was 31.01±4.11 and for the control group, it was 31.50±3.91. The difference in this case was not significant (P=0.511). The difference was not also significant for varicocele grade (P=0.523). Sperm count before surgery was 33.01±6.21 M/ml and for the control group it was 34.45±8.45 M/ml (P=0.292). After surgery, the amounts were 91.88±6.74 M/ml and 60.26±11.79 M/ml, relatively (P<0.0001). Mean sperm motility before surgery for case and control group was 33.06±2.35% and 22.68±2.62%, relatively (P=0.402), and in the period of 3 months following the surgery, it was 42.78±7.44% and 35.68±4.36, relatively (P<0.0001).

Conclusion: Application of antioxidant drugs following a varicocelectomy surgery, can improve semen fluid quality. We suggest more studies to be done in order to reveal better antioxidant protocols to improve semen quality after varicocelectomy.

UP.226

How to Preserve Fertility in Patients with Prostate TB

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Introduction and Objective: Tuberculosis (TB) is one of the most common reasons for infertility – both male and female in regions with TB epidemic.

Materials and Methods: In open prospective comparative randomize study, 72 patients with prostate TB were enrolled. Patients were divided into 2 groups. First group (49 patients) who alongside with standard anti-TB therapy received spermato-protective treatment with Selzinc (this drug consists from selenium, zinc and vitamins A and E). Second group was control – 23 patients with prostate TB who received standard anti-TB only.

Results: Anti-TB therapy negatively influenced on fertility in 2nd control group: in 2 months number of sperms decreased on average on 23.9%, number of active sperms decreased on average on 10.6%, and number of sperms with normal morphology decreased on average on 32.3%. On contrary, in 1st group, who received spermato-protective treatment, total number of sperms increased on average on 47.8%; number of active sperms (A+B) increased on average on 40.5%, number of morphologically normal sperms increased on 41.9%.

Conclusion: Patients with prostate TB need additional spermato-protective treatment with selenium, zinc, vitamins A and E to preserve fertility.

UP.227

Short-Period Influence of Chronic Morphine Exposure on Serum Levels of Sexual Hormones and Spermatogenesis in Rats

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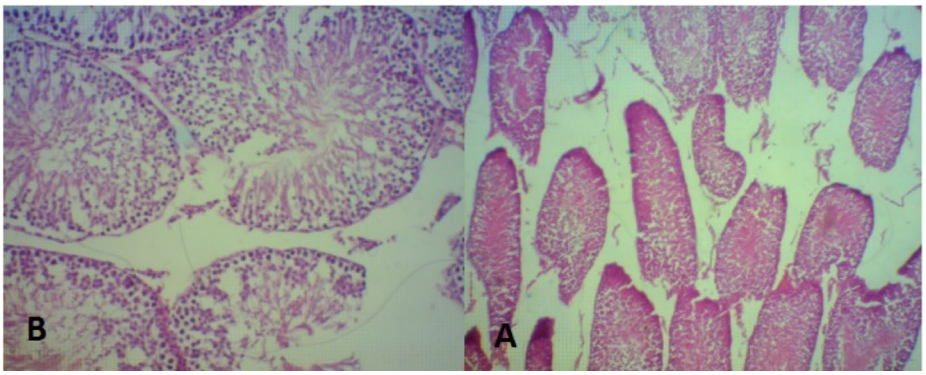
UP.227, Table 1.

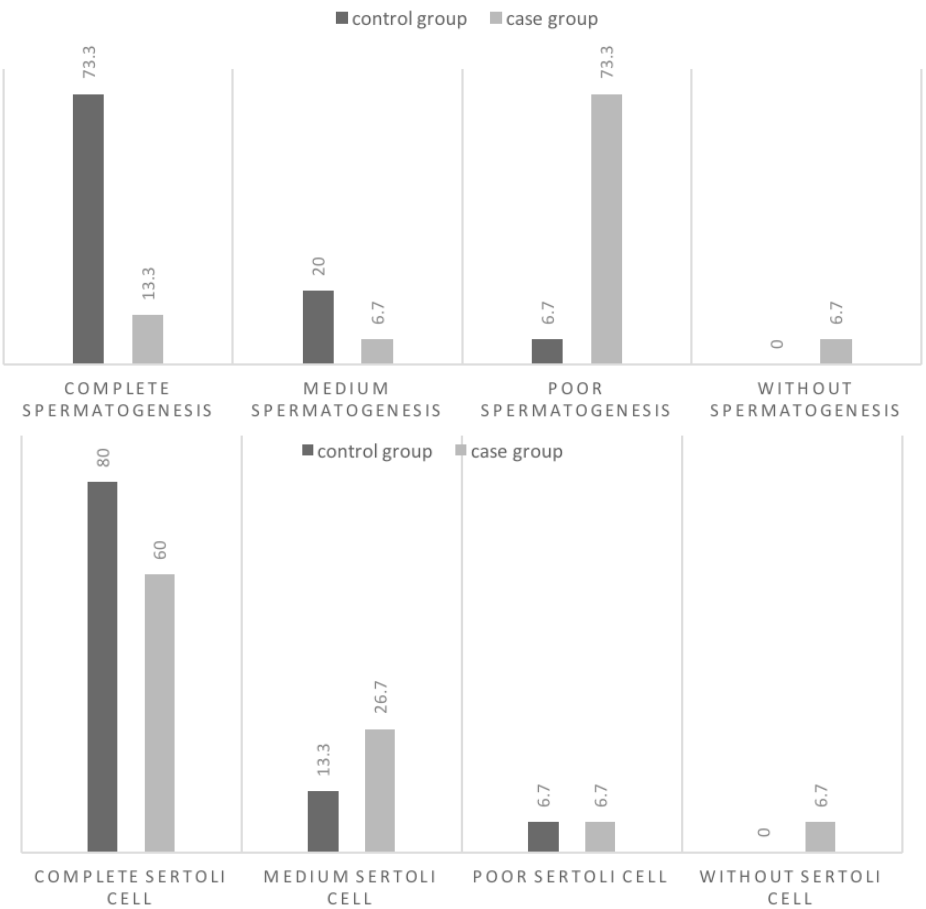
PARAMETER	CASE GROUP	CONTROL GROUP	P VALUE
Mean weight (g)	134	157	0.013
Mean seminiferous tubule diameter (mm)	135	165	0.094
Mean LH serum level (mg/dl)	3.41	3.79	0.002
Mean FSH serum level (mg/dl)	7.05	7.06	0.966
Mean sperm count in each HPF	1.2	4.5	0.001
Mean testosterone serum level	2.34	3.1	0.263
Mean testis weight	3.06	2.87	0.176

LH serum level was significantly different between case and control group, but there is no difference in FSH and testosterone serum level between two groups. Also, there is no differences in mean weight and seminiferous tubule diameter between two groups.

UP.227, Figure 1. Normal View of Seminiferous Tubuls In Control Group (A) and Hyaline Degeneration of Seminiferous in Morphine Group



UP.227, Figure 2. Comparison of Spermatogenesis between Morphine-Treated Rats and Control Group



Introduction and Objectives: Increased rates of addiction and its broad societal complications are well known. One of the most important systems that may malfunction in drug abusers is the reproductive system, and evaluating patients for this potential risk may lead to increased awareness.

Materials and Methods: Thirty 60-day-old male rats were divided into control and target groups. The target group underwent 5 mg/kg intraperitoneal injections of morphine twice a day while the control group underwent normal saline injections (at the same dosage). After 60 days, the rats were anesthetized, and after blood sampling, they underwent bilateral orchiepididymectomy. Histological and hormonal evaluations were performed on the samples.

Results: Levels of sex hormonal features and spermatogenesis were significantly reduced in the target group compared to the control group. LH levels showed a meaningful decrease in the target group, but FSH and testosterone levels did not. On histological section analysis, mature sperm were meaningfully decreased in the target group.

Conclusions: Chronic use of opioids may lead to alterations in sexual features and sexual hormones. Therefore, opioids have the potential to cause infertility. These changesmayresult from the effect of the drugs on the hypophysis or hypothalamus, the direct effect of the drugs on the seminiferous tubules, or a combination of both. The findings suggest that public awareness about addiction may cause decreased infertility rates.

UP.228

Prognostic Significance of CD 31 Expression in Patients with Clear Cell Renal Cell Carcinoma

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Introduction and Objective: Intratumoural microvessel density (MVD) has prognostic significance in selected neoplasms. To evaluate the prognostic information of MVD in Clear cell renal cell carcinoma (CCRCC) we assessed the immunohistochemical expression of CD 31.

Materials and Methods: Tumor samples taken from 40 patients with histopathology diagnosis of CCRCC and tissue samples from 20 normal kidneys as a control group were examined by immuno-histochemical staining for CD 31.

Results: The mean CD 31 expression in CCRCC was significantly higher than in the benign kidney tissue (109.5 vs. 23.2) (U=699, P<0.0001). CD 31 expression values in CCRCC were negatively correlated with degree of tumor necrosis (r =-0.304, P=0.055); the Fuhrman nuclear grade (r=-0.132, P=0.415); the tumor size (r=-0.09, P =0.578); the pathological stage (r=-0.03, P=0.817), VEGF A expression (r = -0.09, P=0.817); and degree of tumor hemorrhage (r=-0.01, P=0.93). CD 31 expression values in CCRCC were positively correlated with DFS (r=0.182, P=0.334); PFS (r=0.162, P=0.653) and CSS (r=0.160, P=0.731) in CCRCC.

Conclusion: Our data indicate that an increased CD 31 expression has been associated with smaller tumor size, lower nuclear grade, lower pathologic stage, lower VEGF A expression and lower degree of tumor necrosis. Increased CD 31 has been associated with better outcomes and better overall survival in CCRCC.

UP.229

PD-1 And PD-L1 Expression in Primary Renal Cancer Is Associated with Clinicopathological Features and Prognosis in Patients with Metastatic Clear Cell Renal Cell Carcinoma

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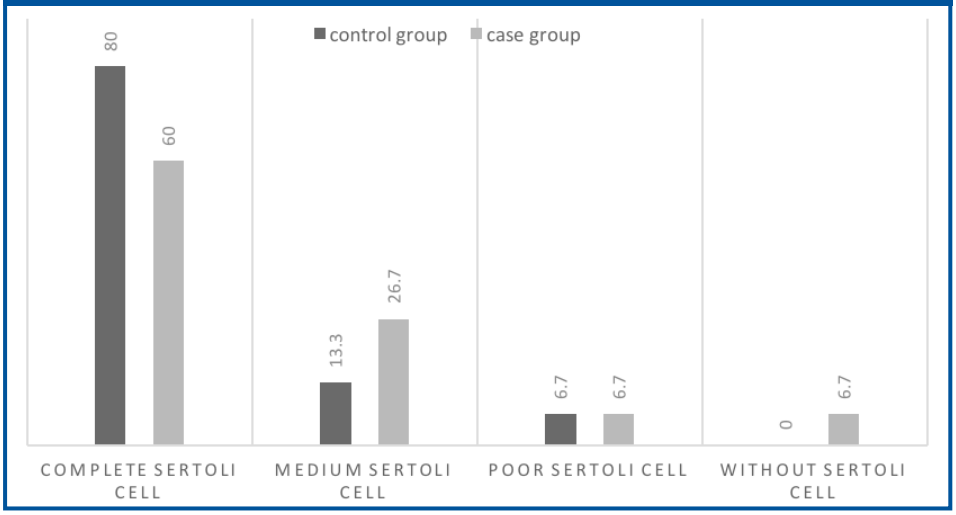
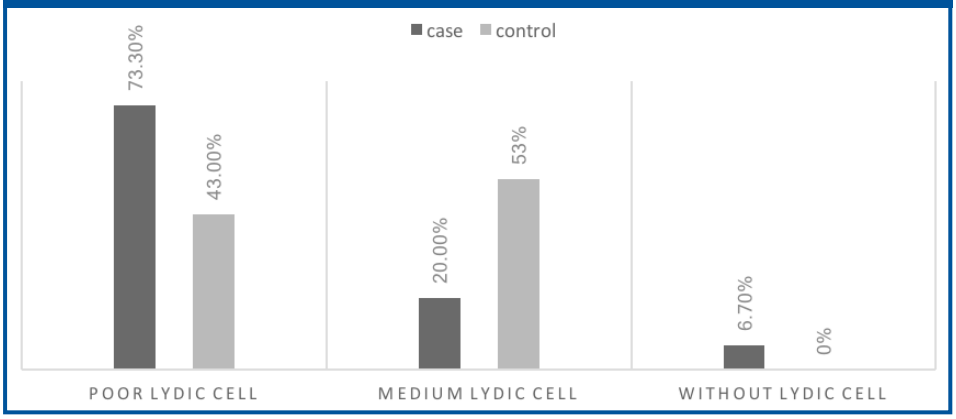
Introduction and Objective: In renal cell carcinoma (RCC), several prognostic biomarkers have been identified and are under investigation. Several reports have shown that the expression of programmed death 1 (PD-1) and its ligand PD-L1 is associated with poor

UP.227, Figure 3. Distribution of the Sertoli Cells in the Control Group and the Target (in percent)



UP.227, Figure 4. Distribution of the Lydic Cells in The Control Group and the Target (in percent)



outcome for patients with RCC. The present study is aimed to evaluate the expression of PD-1 and PD-L1 and to investigate their clinical and prognostic significance in patients with clear cell RCC (CCRCC) receiving molecular targeted therapies.

Materials and Methods: A total of 37 patients with metastatic CCRCC who underwent surgery and received molecular targeted therapies from March 2008 to April 2016 were retrospectively reviewed and analyzed. Tissue specimens from the patients were analyzed for PD-1 and PD-L1 expression by immunohistochemistry.

Results: Median patient age was 64 years old (range=53-78). The majority of patients were male (83.8%). All MSKCC risk groups were represented among the patients with 35.1% with favorable-, 51.4% with intermediate- and 13.5% with poor-risk. The expression of PD-1 and PD-L1 was observed in 19 (51.4%) and 10 (27.0%) patients, respectively. The expression of PD-1 and PD-L1 was associated with larger primary renal tumor size, higher nuclear grade, sarcomatoid feature, pre-treatment lower hemoglobin level and higher C-reactive protein level. Kaplan-Meier analysis revealed that no significant difference in progression free survival of first line molecular targeted therapy was found for PD-1 (p=0.1744) and PD-L1 (p=0.6487) expression. However, PD-1 expression has significant impact on overall survival (OS) (p=0.0246), while for PD-L1 expression only a trend is seen for OS (p=0.0647). The patients with PD-1 expression showed higher infiltration of CD8 (p=0.0012) and FOXP3 (p<0.0001) positive tumor infiltrating lymphocyte (TIL). The patients with PD-L1 expression showed higher infiltration of FOXP3 positive TIL (p=0.0034), while there was no significant difference in CD8 positive TIL (p=0.1188).

Conclusion: PD-1 and PD-L1 expression is significantly associated with adverse clinicopathological features in CCRCC. Furthermore, PD-1 expression could be one of biomarkers suggesting poor outcome in patients with metastatic CCRCC receiving molecular targeted therapies.

UP.230

Prognostic Factors in Patients with Non-Clear Cell Renal Cell Carcinoma

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Introduction and Objectives: Recently there is a trend towards higher rates of incidence of non-clear cell renal cell carcinomas (RCC). The aim of our study was to evaluate prognostic factors that influence on the probability of recurrence and progression of disease, to assess progression-free (PFS) and cancer-specific survival (CSS).

Materials and Methods: Analysis of database included 1781 localized and locally-advanced RCC patients who undergone surgery of kidney tumor in our institution since 1993 till 2015. Non-clear cell RCC was identified in 254 (14.2%) patients. Mean age of patients was 57.4 (16-79) years. Papillary RCC types was diagnosed in 120 (6.7%) patients, chromophobe - in 102 (5.7%), collecting-duct carcinoma in 4 (0.2%), mixed types - in 18 (1.0%) and other rare variants of RCC - in 10 (0.6%) patients. Pathological stage pT1a was diagnosed in 116 (45.7%) patients, pT1b - in 57 (22.4%) patients, pT2a - in 17 (6.7%) patients, pT2b - in 5 (2%), pT3a - in 26 (10.2%), pT3b - 5 (2%), pT4 - in 2 (0,8%), pN+ - 26 (10.2%) patients. Median follow-up time was 35 mo. (1-141 mo.). Progression disease was diagnosed in 20 (7.9%) patients and 19 (7.5%) patients of them died. Fourteen (5.5%) patients died due to progression of RCC.

Results: Statistically significant correlation was revealed between pT stage (R=0.37), tumor size (R=0.31), vascular invasion (R=0.48), presence of sarcomatoid component (R=0.23) and Fuhrman grade (R=0.26), and stage pN+ (R=0.30), types of non-clear cell RCC (R=0.19), number of tumors (R=0.21), presence of symptoms (R=0.33) and probability of disease progression (p<0.05). No significant correlation between presence of necrosis was revealed (p>0.05). Probability of death due to RCC progression correlated only with pT stage (R=0.26), tumor size (R=0.17), vascular invasion (R=0.34), stage pN + (R=0.20); presence of sarcomatoid component (R=0.28) and Fuhrman grade (R=0.27) and number of tumors (R=0.21), presence of symptoms (R=0.30) p<0.05. Five-year PFS and CSS was 83.8% and 84.6%, respectively. Cox regression analysis impossible to conduct due to small number of completed cases.

Conclusions: The most important prognostic factors that have significant influence on disease recurrence and cancer-specific death in non-clear cell RCC patients were pT and pN+ stage, tumor size, presence of vascular invasion, sarcomatoid component, Fuhrman grade and symptoms.

UP.231

Paraneoplastic Syndromes in Renal Cell Carcinoma: Review and Case Report.

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Introduction and Objective: Renal cell carcinoma (RCC) is unique among the genitourinary malignancies in that up to 40% of affected patients show signs and symptoms of a paraneoplastic syndrome. The importance of understanding these paraneoplastic symptoms lies in the fact that they may be the initial manifestation of either primary or recurrent disease. This review will provide information on many paraneoplastic syndromes associated with RCC (prevalence, proposed mechanisms of action, clinical assessment

and treatment options); as an example of a rare variant, an atypical case of paraneoplastic dermatomyositis treated with radical nephrectomy is also reported.

Materials and Methods: A MEDLINE search for "paraneoplastic syndrome", "renal cell carcinoma", "renal cancer" and "dermatomyositis" was performed and information was selected to make a review. An atypical case of dermatomyositis associated with RCC was reported based on clinical data records of our Institution.

Results: Hypertension, constitutional symptoms (fever, weight loss, and fatigue) and hypercalcemia are the most frequent paraneoplastic symptoms associated with RCC. Other less frequent conditions include polycythemia (1-8%), nonmetastatic hepatic dysfunction (3-20%), galactorrhea, Cushing's syndrome, hyper/hypoglycemia, amyloidosis and some neuromyopathies. A case of a paraneoplastic dermatomyositis is reported: a 35-year-old female, developed severe muscle weakness. Heliotrope rash, Gottron's papules, blood results and electromyography suggested a diagnosis of dermatomyositis. A computed tomography of the chest, abdomen and pelvis showed a solid mass in the left kidney. She underwent a left laparoscopic radical nephrectomy and histology confirmed renal cell carcinoma (clear cell subtype). After 3 months, dermatomyositis manifestations completely disappeared and the patient stopped corticotherapy. She remains asymptomatic 12 months after surgery.

Conclusion: RCC was previously referred to as the internist's tumor because of the predominance of systemic rather than local manifestations. Most paraneoplastic syndromes associated with localized RCC are only definitively treated with nephrectomy. The reported case illustrates the potential role of nephrectomy in cases of dermatomyositis induced by renal cell carcinoma as there was no improvement with medical therapy prior to surgery. Only 5 cases of dermatomyositis associated with RCC were published. The recurrence of a previous paraneoplastic syndrome should alert the physician to possible disease progression.

UP.232

High Renal Sinus Fat Area Predicts Better Progression-Free Survival for Non-Metastatic Clear-Cell Renal Cell Carcinoma

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Introduction and Objective: In this study, we aimed to evaluate the correlation between renal sinus fat accumulation and the survival of non-metastatic clear-cell renal cell carcinoma (ccRCC).

Materials and Methods: We retrospectively enrolled 268 patients with ccRCC at our center between December 2009 and December 2015. The clinicopathological factors assessed were collected. Visceral fat area and subcutaneous fat area at the level of the umbilicus and renal sinus fat area (RSFA) were also evaluated. Progression-free survival (PFS) was determined by Kaplan-Meier curves and potential independent prognostic factors on PFS were identified by multivariable Cox analysis. The predictive value of RSFA in PFS was further examined in a propensity-score matched cohort by Kaplan-Meier curves.

Results: During the follow-up periods (median, 38 months), 48 patients (17.91%) experienced progression. Patients with high RSFA showed a better PFS than those with low RSFA in both univariable (HR: 0.240; 95% CI: 0.119 – 0.482; $p < 0.001$) and multivariable (HR: 0.447; 95% CI: 0.215 – 0.930; $p = 0.031$) analysis, the significance still remained in the propensity-score matched cohort using Kaplan-Meier curves and log-rank test ($p = 0.033$).

Conclusion: The present study provided the first evidence that high RSFA may presents as an independent factor for better PFS for non-metastatic ccRCC.

UP.233

Impact of Preoperative Serum CYFRA 21-1 Level on Extra-Urothelial Recurrence after Nephroureterectomy for Non-Metastatic Upper Tract Urothelial Carcinoma

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Introduction and Objective: Upper tract urothelial carcinoma (UTUC) can often relapse despite radical surgery. The prognosis of the recurrent disease is mostly poor. Preoperative parameters that predict extra-urothelial recurrence are needed to identify patients who may benefit from intensified therapy such as neoadjuvant chemotherapy. We previously reported that serum CYFRA 21-1 level would be a prognosticator for patients with G3 or muscle invasive UTUC. The aim of this study was to determine the prognostic impact of preoperative serum CYFRA 21-1 level on extra-urothelial recurrence after nephroureterectomy in patients with non-metastatic UTUC.

Materials and Methods: The subjects were 49 patients with non-metastatic UTUC who underwent nephroureterectomy without neoadjuvant therapy between 2011 and 2017 at our institution. From the database, we collected preoperative parameters, including age, sex, laterality, clinical T stage, serum CYFRA 21-1 level, serum C-reactive protein (CRP) level, hemoglobin level, urine cytology, and history of concomitant or synchronous bladder tumor. We assessed the performance of these parameters in predicting extra-urothelial recurrence after nephroureterectomy by performing univariate and multivariate analyses with a Cox proportional hazards model. The cutoff CYFRA 21-1 level was defined according to the results of the receiver-operating characteristic analyses.

Results: The median (range) age and follow-up period were 74 years (39–90 years) and 12.6 months (0.8–58.9 months), respectively. The median (range) serum CYFRA 21-1 and CRP levels were 2.7 ng/mL (1.2–12.9 ng/mL) and 0.1 mg/dL (0–2.4 mg/dL), respectively. In the univariate analysis, CYFRA 21-1 level (cutoff, 3.2 ng/mL) and clinical T stage (<3 vs. ≥3) predicted extra-urothelial recurrence. The multivariate analysis revealed that serum CYFRA 21-1 level ($p = 0.0392$, hazard ratio = 3.7) and clinical T stage ($p = 0.0215$, hazard ratio = 4.16) were independent predictors of extra-urothelial recurrence.

Conclusion: This study demonstrates that preoperative serum CYFRA 21-1 level could predict extra-urothelial recurrence after nephroureterectomy among patients with non-metastatic UTUC.

UP.234

The Efficacy of Current Biopsy Practices in Minimising Unnecessary Treatment of Small Renal Masses

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Introduction and Objectives: With the advancements in imaging technology, there has been a rise in detection rates of small renal masses. It is well established that around 20% of small renal masses are benign. Despite the earlier detection of suspicious masses, mortality has remained largely stable, suggesting over treatment of small renal masses. These concerns have led to a resurgence in renal biopsies. However, minimal guidelines exist regarding who should undergo biopsy. We compare current biopsy practice at a large Australian tertiary institution with current guidelines and examine its efficacy in minimizing unnecessary intervention.

Materials and Methods: Patients who underwent surgical intervention for small renal masses between July 2007 and December 2016 at our institution were retrospectively analyzed with a focus on the trends in patients with benign disease receiving intervention. In addition, a retrospective study of patients with small renal masses who received biopsies during the same period was conducted, identifying the indications for biopsy.

Results: Two hundred and sixty-one patients underwent extirpative intervention for small renal masses. Of these patients, 36 underwent radical nephrectomy, 7 (19.4%) of which were benign on post-operative analysis. Two hundred and twenty-five patients underwent partial nephrectomy with 42 (18.7%) revealing benign disease. In total, 49 (18.8%) patients who received surgical intervention had benign disease. These patients were, reasonably, not pre-operatively biopsied according to current guidelines. The proportion of patients undergoing intervention for benign disease has largely remained consistent throughout this time period. Thirty patients were biopsied for small renal masses. Over this time period, there has been an upward trend in number of biopsies. Indications for biopsy were largely for patients suspicious for metastatic disease or lymphoma, selection for active surveillance in patients who were poor surgical candidates and patients with solitary kidneys.

Conclusion: Our current biopsy practices for small renal masses are largely in keeping with guidelines

as suggested by various urological and oncological societies. Despite this, the proportion of patients at our institution who receive intervention for post-operatively diagnosed benign disease continues to be around 20%. We believe there is a need to broaden the recommendations for the biopsy of small renal masses in order to minimize unnecessary intervention.

UP.235

Factors to Predict Malignancy Likelihood in Renal Masses and Their Utility in Improving Selection of Renal Biopsy Candidates for Evaluation of Small Renal Masses

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Introduction and Objective: Alongside the recent increased rates of incidentally detected small renal masses, we have seen a rise in the uptake of percutaneous renal biopsy. With no clear guidelines for whom to biopsy, there is a need for consensus. Patient factors, tumour characteristics and intervention options all influence the decision to biopsy. Considerable debate surrounding the topic of routine biopsy still remains. We review the current literature to identify factors predictive of benign disease and assess whether these characteristics could aid the selection of patients for biopsy.

Materials and Method: A formal PRISMA literature review was undertaken using EMBASE, Medline and Web of Science. MeSH terms were used including: 'kidney tumour', 'kidney biopsy', 'predictive variables' and 'benign disease'. Abstracts and non-English papers were excluded from our analysis. These were then analyzed and applied to patients who had undergone surgical intervention for small renal masses at an Australian tertiary institution.

Results: The literature suggests that increasing tumour size and increasing RENAL nephrometry score are associated with a higher risk of malignant disease. Lower age and female gender were found to be more likely correlating with benign disease. In addition, two pre-operative nomograms predicting likelihood of malignancy were identified. These nomograms used age, gender, tumour size, smoking and RENAL nephrometry scores as predictive variables. Whilst they do not have sufficient utility on their own to be used to make clinical decisions regarding management, there may be potential in selecting patients based on these nomograms for small renal mass biopsy.

Conclusion: Percutaneous biopsy has a role in minimising over-treatment of small renal masses, particularly in an older population with increasing comorbidities. However, it is necessary to have clearer guidelines to encourage selection of patients appropriate for biopsy. We believe that the use of predictive factors of benign disease and pre-operative nomograms have potential to select patients for renal biopsy to minimise unnecessary intervention.

UP.236

Long-Term Oncologic Outcome after Robot-Assisted Partial Nephrectomy for T1 Renal Tumors

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Introduction and Objectives: Nowadays, open PN is not considered anymore a treatment option in clinical T1 tumors, but only in patients with renal masses unfit for minimally invasive approach (robot or laparoscopic PN). Robot-assisted partial nephrectomy (RAPN) seems to be the most promising minimally invasive approach in the treatment of renal masses suitable for organ spearing surgery. Long-term oncologic results are required to assess the presumed superiority of this approach. The aim of this study was to analyze RAPN long-term oncologic outcomes achieved in a tertiary robotic reference center.

Materials and Methods: Between April 2009 and September 2013 all patients with clinical-T1-stage renal masses underwent RAPN in our tertiary cancer center. The study has been approved by local Ethics Committees and it conforms to the provisions of the Declaration of Helsinki in 1995. Written informed consent to take part was given by all participants. We prospectively registered demographic, clinic and pathology data of the patients in an Excel database. Five experienced surgeons in open and robotic PN performed the surgeries. Patients were followed according to the guidelines recommendations and institutional protocol. Statistical analyses were performed using Stata 11.0 statistical software (Stata Corp., College Station, TX, United States).

Results: A total of 123 patients underwent RAPN. Median follow-up was 54 months (IQR 43 to 67). Most of patients (90, i.e. 85.7%) had malignant tumors at final pathology. Among them, 66 (73.3%) were T1a, 12 (12.4%) T1b, 3 (3.3%) T2a and 9 (10%) were T3a. Only 2 patients (1.9%) had positive surgical margins (PSM) and complication rate was 17.1%. Relapse rate was 5.7%, including 2 (1.9%) local recurrences and 4 (3.8%) distant metastasis (lung). Five-year disease-free survival (DFS) was 91.64% (CI 82.03-96.22), with lower rate in patients with PADUA 6-7 score (87.5 %, CI 71.8-94.8); 5-year metastases-free survival (MFS) was 94.8% (CI 86.67-98.03), with lower rates in patients with PADUA 6-7 score (91.2%, p=0.24), and 5-year local recurrence free-survival (LRFS) was 96.6% (CI 86.83-99.19).

Conclusion: Excellent long-term DFS and OS rates achieved after RAPN for T1 renal tumors suggest that robotic-approach might become the new gold standard.

UP.237

Galectin-9 as a Biomarker to Predict the Benefit from Adjuvant Chemotherapy in Bladder Urothelial Carcinoma

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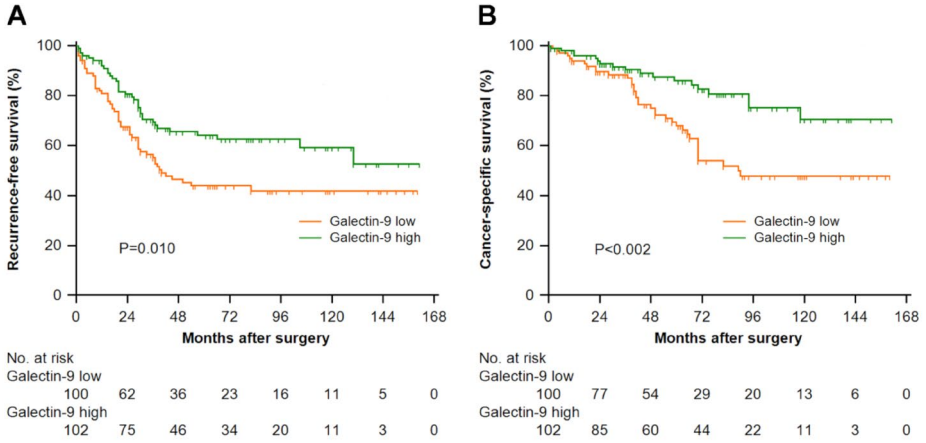
Introduction and Objective: Galectin-9, a member of the "tandem repeat" type galectins performing as animal lectins with an affinity for β-galactosides, has been well documented to exert crucial functions in immunomodulation, survival and growth of various tumors. This study aims to reveal the clinical significance of galectin-9 in urothelial carcinoma of the bladder (UCB) postoperatively.

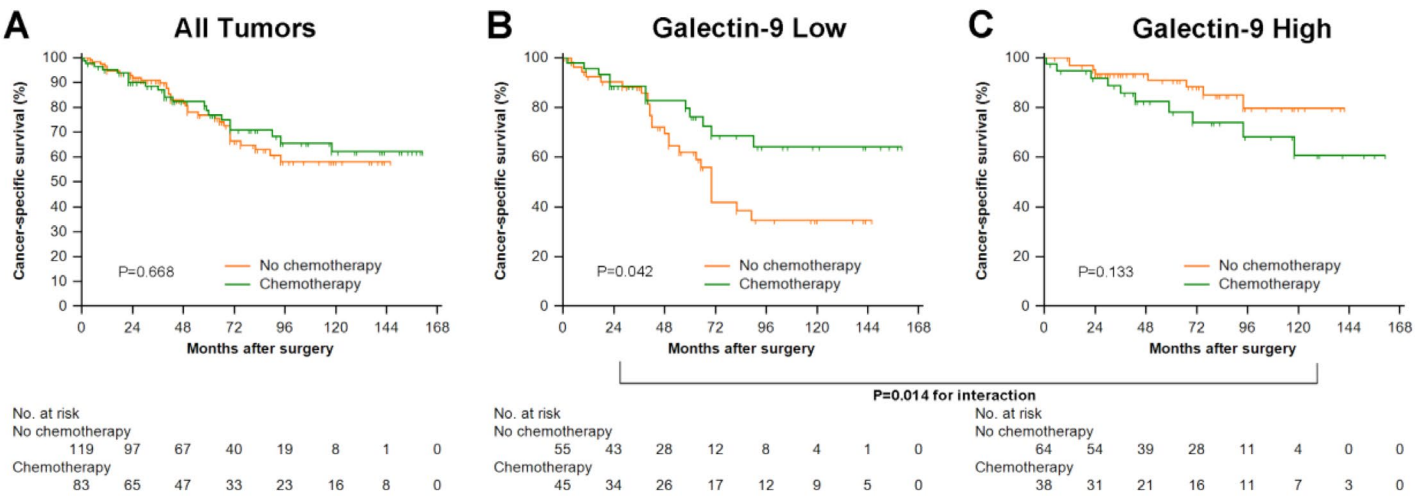
Materials and Methods: We retrospectively included 202 UCB patients who underwent radical cystectomy at a single institute from 2002 to 2014. Galectin-9 ex-

UP.237, Figure 1. Prognostic Power of Galectin-9 in UCB Patients



Kaplan–Meier analyses of recurrence free survival and cancer specific survival in patients with UCB based on the expression of galectin-9. (A) RFS according to intratumoral galectin-9 expression. (B) CSS according to intratumoral galectin-9 expression.

UP.237, Figure 2. Relationship between Galectin-9 Expression and CSS Benefit from Adjuvant Chemotherapy in Patients with Postoperative UCB



Among all the patients in the cohort, treatment with adjuvant chemotherapy was not related to cancer-specific survival (A). However, treatment with adjuvant chemotherapy was associated with a higher rate of cancer-specific survival in the galectin-9 low group (B), but it was not associated with a higher rate of cancer-specific survival in the galectin-9 high group (C). A test for an interaction between the biomarker and the treatment indicated that in the benefit associated with adjuvant chemotherapy was superior among galectin-9 low patients than among galectin-9 high patients.

pression was assessed by immunohistochemistry on tissue microarrays. Kaplan-Meier method was conducted to plot survival curves. Prognostic nomograms were constructed via integrating all the independent indicators from multivariate Cox analysis for recurrence-free survival (RFS) and cancer-specific survival (CSS). In addition, we evaluate whether patients with increased or decreased galectin-9 expression might benefit from adjuvant chemotherapy.

Results: Low galectin-9 expression was significantly correlated with lymphovascular invasion (P=0.002), early recurrence (P=0.010) and short CSS (P=0.002). Furthermore, multivariate analysis identified galectin-9 expression as a potential independent indicator for RFS (hazard ratio [HR] = 0.62, 95% confidence interval [CI] = 0.40-0.95, P=0.030) and CSS (HR = 0.46, 95% CI = 0.26-0.81, P=0.008). Moreover, the benefit associated with adjuvant chemotherapy was superior among galectin-9 low patients than among galectin-9 high patients (P=0.014).

Conclusions: Expression of galectin-9 is an independent prognostic factor for RFS and CSS in patients with UCB. Evaluation of galectin-9 expression may predict the benefit from adjuvant chemotherapy.

UP.238

Clinical Outcome of Laparoscopic Partial Nephrectomy for T1a Renal Tumors

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Introduction and Objective: Laparoscopic partial nephrectomy (LPN) for small-diameter renal tumors is regarded as comparable with nephrectomy with regard to carcinostatic ability, and it is recommended as the standard surgical procedure for postoperative preservation of renal function.

Materials and Methods: Forty-five patients who underwent LPN by April 2015 were retrospectively investigated. The operation time, ischemic time, blood loss, eGFR before and after surgery, and its reduction rate were analyzed. In addition, these were investigated in the early and late periods, and by the Renal Nephrometry Score.

Results: The mean age of the patients was 63.1 (range 30 to 85) years old, the mean tumor diameter was 20.6 (range 9 to 35) mm, and the mean R.E.N.A.L Nephrometry Score (RNS) was 6.1 (range 4 to 10). The mean operative time was 152.0 (range 87 to 255) minutes, the mean ischemic time was 31.0 (range 12 to 68) minutes, and the mean blood loss was 117.9 (range 3 to 2305) ml. On comparison between the early and late periods of surgery, the ischemic time was shorter in the late period (p=0.030). By RNS, blood loss was lower in the moderate score group (p=0.033), and eGFR reduction was smaller in the low score group (p=0.003). On multiple regression analysis of postoperative eGFR, only ischemic time was a factor common with eGFR after one month and the reduction rate.

Conclusion: LPN requires resection of the tumor and complete suture of the renal parenchyma within a limited time, which is considered technically difficult. In this study, the ischemic time shortened with surgery experience, but it did not influence the postoperative renal function. The ischemic time was the most influential factor for postoperative renal function.

UP.239

A New Hemostatic Patch in Partial Nefrectomy: Veriset™

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Introduction and Objective: The open- or laparoscopic partial nephrectomy is a common used treatment in renal carcinomas. An important step in this procedure is to achieve adequate haemostasis of the renal parenchyma after resection of the tumour. The goal is to complete this step as quickly and efficient as possible to reduce the warm ischaemia time of the kidney. In this study, we will show you the preliminary results of a new haemostatic patch: Veriset™

Materials and Methods: From June 2016 until November 2016, 11 patients underwent an open or laparoscopic partial nephrectomy due to the suspicion of a renal tumour. In this patient, we used the Veriset™ patch. This topical haemostatic patch is completely free of human or animal components and is made up by a layer of oxidized regenerated cellulose, a layer of trilysine with reactive polyethylene glycol. These ingredients ensure a rapid and effective haemosta-

UP.239, Table 1. Results

Patient characteristics	Mean	Median
Age	67.7	68
BMI	30.1	29.7
Radius tumour (cm)	4.0	3.4
Gender	Male 6 (60%)	Female 5 (50%)
Per-operative characteristics	**Mean**	**Median**
Operation time (min)	125	115
Blood loss (ml)	248	200
Warm ischaemia time (min)	13	11
Outcomes	**Mean**	**Median**
Hospital stay (days)	5.4	5
Complications		
Clavien I Clavien II Clavien III Clavien IV	0 (0%) 3 (27%) 1 (9%) 0 (0%)	
Blood transfusion (n patients)	1 (9%)	

sis. The patch is fully absorbed after approximately 4 weeks. The patch is attached to the renal parenchyma with sutures.

Results: In these study (10 patients) the mean warm ischaemia time was 13.4 minutes. Mean total blood loss during the procedure was 248 ml. The average operation time was 125 minutes. In one patient, there was a grade III complication (Clavien-Dindo scale). This patient had a late bleeding on the 13th postoperative day and required a selective embolization and blood transfusion. She recovered well afterwards.

Conclusion: Our preliminary experience with the Veriset™ haemostatic patch shows promising results. Its use is feasible in partial nephrectomy. The limitation of this study is the small number of patients included. We expect however, that the use of this patch might lead to significantly less blood loss and a shorter warmer ischaemia time. Further expansion of the group and comparison to other patches will take place.

UP.240

Partial Nephrectomy: Retrospective Analysis of the Surgical Outcomes and its Correlation with the Renal Nephrometry Score

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Introduction and Objective: We evaluated the oncological outcomes and perioperative complications of a hospital-based cohort of patients submitted to partial nephrectomy (PN) and correlated these variables with RENAL score (RS).

Materials and Methods: Data from 181 patients submitted to PN between 2008-2015 was retrospectively analyzed, regarding demographic, clinical and pathological characteristics at diagnosis: age, gender, risk factors, RS, histology, operative time, duration of hospital stay and complications according to the Clavien-Dindo classification. Preoperative RS was calculated using computed tomography scan, only available for 134 patients.

Results: The median age was 65 years (56-74). The median tumor size was 27.2 mm (21.3-35.6) and the median RS was 6 (5-7). 80 (59.7%) patients presented lesions of low complexity (RS 4-6), 52 (38.8%) moderate complexity (RS 7-9) and 2 (1,5%) high complexity lesions (RS 10 -12). The median operative time was 127 minutes (103-155). In pathological analysis, 128 (71%) patients had RCC, with predominance of the clear cell variant [n = 82 (45.3%)]. Fifty-three (29%) patients had benign lesions, with predominance of oncocytoma [n = 26 (14.4%)] and angiomyolipoma [n = 10 (5.5%)]. Surgical margins were positive in 9 patients (7.3%). The median length of hospital stay was 7 days (6-9). Thirty-five (19.3%) patients had perioperative complications, mostly of minor severity (grade I-II) [n = 19 (54.3%)]. Infections [n = 13 (37.1%)], vascular complications [n = 15 (42.9%)] and urinary fistula [n = 4 (11.4%)] were the most frequent. There was a statistically significant positive association between RS, meanly the "R" component (radius score), and the occurrence of postoperative complications (p = 0.004) and the length of hospital stay (p = 0.034).

UP.240, Table 1.

Variable	n = 181 patients
Age, median (p25-75)	65 (56-74)
Gender, n (%)	
Male	113 (62,3)
Female	68 (37,7)
Smoking, n (%)	26 (14,4)
Hypertension, n (%)	89 (49,2)
Tumor size, mm, median (p25-75)	30 (11,4-93)
RENAL score, median (p25-p75)	6 (5-7)
RS 4-6, n (%)	80 (59,7)
RS 7-9, n (%)	52 (38,8)
RS 10-12, n (%)	2 (1,5)
Operative time, min., median (p25-75)	127 (103-155)
Histologic subtype, n (%)	
RCC, clear cell	82 (45,3)
RCC, papillary	26 (14,5)
RCC, chromophobe	11 (6,2)
Other malignant	9 (5)
Oncocytoma	26 (14,4)
Angiomyolipoma	10 (5,5)
pT stage, n (%)	
pT1a	91 (73,4)
pT1b	24 (19,3)
pT3a	9 (7,3)
Positive surgical margins, n (%)	9 (7,3)
Hospital stay, days, median (p25-75)	7 (6-9)
Complications, Clavien-Dindo classification, n (%)	35 (19,3)
Grade I	2 (1,1)
Grade II	17 (9,4)
Grade III	13 (7,2)
Grade V	3 (1,6)

Conclusion: Corroborating the most recent literature, nephrometric stratification of renal lesions is recommended before PN be performed to better predict oncological outcome and potential complications.

UP.241

Clinical Assessment of ERAS Protocol for Nephron Sparing Surgery

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Introduction and Objectives: Surgical tendency in treatment renal carcinoma had completely given preference to nephron sparing surgery (NSS) in last years. It is the "gold standard" for tumors less than 4 cm. Such approach also has reduced hospitalization, intraoperative blood loss, allowed to achieve comparable oncological outcomes and fits into the concept of Enhanced recovery after surgery (ERAS). Nevertheless, currently no data regarding the assessment of the use minimally invasive surgery in conjunction with ERAS principles for the treatment of kidney cancer. We had decided to compare the results of treatment in patients with end without ERAS protocol. Secondary end-point the search of predictive factors of complications.

Materials and methods: This was a large, single-center, retrospective 3-year cohort study at N.N. Petrov Research Institute of Oncology, St. Petersburg, Russia, between January of 2014 and December of 2016. We included 197 subjects (30-80 years) in our analyses, which were separated into 2 groups. The first group of conventional surgery (CS) were included 97 patients, were not applied or applied partially ERAS elements. The second group (100 patients; fast track group) were applied: absent of bowel preparation, carbohydrate treatment, laparoscopic/ retroperitoneoscopic surgery, intracutaneous wound suturing, postoperative analgesia. We assessed the effect of fast track elements on intraoperative or early postoperative complications, duration of surgery, hospital readmission and staying in Intensive Care Unit.

Results: The tumor size (median) in both groups was similar: 39.48mm in the FT and 38.7mm in the CS group (95% CI, p=0.997). An increase in the RENAL nephrometry score of one point resulted in greater odds of being in a higher Clavien–Dindo (C-D) complication rates regardless of the type surgery (odds ratio [OR]: 1.19, 95% CI, p=0.043). We found significant differences between CS and FT groups in C-D complications rates: 3-5 grade - 14.0 vs 3.7%, respectively

UP.240, Table 2.

Variable	RENAL score			p value
	Low complexity (n=80; 59,7%)	Moderate complexity (n=52; 38,8%)	High complexity (n=2; 1,5%)	
Complication, n (%)	11 (13,8)	13 (25)	2 (100)	0,004*
Positive margins, n (%)	4 (8,5)	2 (4,8)	0 (0)	0,751*
Operative time, median (p25-75)	125 (101-164)	124 (105-143)	185 (105-266)	0,792¥
Hospital stay, median (p25-75)	7 (6-8)	7 (7-10)	12,5 (9-16)	0,032¥

* Chi-Square test
¥ Kruskal-Wallis test

(p=0.0002), 1-2 grade were 34.0 vs 15.0 (p=0.0003). Complication rates both groups associated with location tumor in the kidney: the RENAL suffix 'posterior' increased the odds of developing urine leakage or hematomas by 2.6 times (95% CI: 1.07–6.30, p=0.042) when compared with those renal masses classed as "anterior". Other anatomical and clinical factors did not affect discrepancies between FT and CS groups. Median hospitalization in conditions of using ERAS elements, the absence of intraoperative drainage, early activation significantly differs from the length of hospitalization in the case of CS 13 days versus 6 for patients in FT group (U- Test p = 0.0032 CI 95%).

Conclusions: Perioperative ERAS approach did not affect the frequency of intraoperative and could reduce postoperative complications rate in compare with meaning or tumor location in kidney.

UP.242

Effect of Late Renal Function and Oncological Outcomes with Partial Nephrectomy

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Introduction and Objective: Partial nephrectomy has been performed for small renal masses in terms of the preservation of renal function. We examined the relative effect of patients' background and perioperative results on late renal function and oncological outcomes.

Materials and Methods: Data were analyzed from a cohort of 123 patients who underwent open (n=54) or laparoscopic (n=69) partial nephrectomy in our institution between March 2010 and December 2016. Almost of all patients received contrast-enhancing chest and abdominal CT before surgery to define tumors' maximum diameter and after surgery (1,3,6,12 month and once every 6 months after that) to evaluate recurrence and metastasis. We evaluated renal function after surgery with the Percentage of total eGFR preservation(PtGFRP). PtGFRP was calculated in the same manner (postoperative eGFR/Preoperative eGFR × 100). Multiple linear regression analysis was performed to analyze.

Results: Mean age was 66.6 years (range: 32-83), male was 72 patients (58.5%), mean BMI was 24.5 kg/m2 (range: 17.6-39.0), mean tumors' maximum diameter was 28.0 mm (range: 10-62), mean RENAL nephrectomy score was 6.3 (range: 4-11) and comorbidities (hypertension and diabetes) were 44 patients (35.8%) and 25 patients (20.3%) respectively. Mean operative time was 230 minutes (range: 130-436) and mean surgical bleeding was 281 ml (range: 10-1530). 109 patients (88.6%) received artery clamp. Mean ischemia time was 17 minutes (range: 6–60). Mean follow-up period was 20.6 months (range: 1-76) we had never experienced open conversion. Nine patients (7.3%) had complications and 3 patients (2.4%) were above grade III (pseudoaneurysm occurred in 3 patients and they received TAE). A patient (0.81%) had metastasis. No patients died during follow up. Multivariable analysis found that significant risk factors for renal function in postoperative 12 month were female and high RENAL nephrectomy score (7≦). (95% CI -18.3 to -5.3; p < 0.001 and 95% CI -13.1 to -0.6; p < 0.32).

Conclusion: Our study demonstrated sex and RENAL nephrectomy score effected on the preservation of renal function significantly. In addition, it was difficult to show cancer prognosis because of short follow-up.

UP.243

Clinical Outcome of Laparoscopic Partial Nephrectomy Using 3D Imaging

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Introduction and Objective: Partial nephrectomy is the preferred surgical intervention for small renal tumors given the potential benefit of nephron sparing. We retrospectively reviewed our experience and investigated perioperative outcome of partial nephrectomy by laparoscopy using 3D imaging.

Materials and Methods: We analyzed a series of 34 patients (35 tumors) who underwent partial nephrectomy by laparoscopy at Miyazaki University Hospital between April 2011 and March 2016. All patients received single-J stent before surgery. Our protocol called for combining open surgery (hybrid surgery) if the tumor proved to by cystic or larger than 3cm in size. Postoperative complications were recorded according to the Clavien-Dindo system.

Results: Mean age at surgery was 64 years (range 45-77), and mean observation period was 21 months (range 1-53). Retroperitoneal approach was employed for 6 patients, and transperitoneal approach was employed for 20 patients, including eight cases of hybrid surgery. Mean tumor size was 26 mm (range 12 to 47). Mean operative time was 233 minutes (range 136 to 357), and mean laparoscopic time was 162 minutes. Mean warm ischemia time was 35 minutes (range 42 to 326). Average surgical bleeding was 387 ml (range 50 to 1800). There were 4 complications: post-operative hemorrhage (G3a), doren infection (G2), urine leakage (G3a), pseudoaneurysm (G3a). Perioperative blood transfusion rate was 2.9%. Pathological results revealed clear cell carcinoma 24 (70.5%), papillary carcinoma 4 (11.7%), angiomyolipoma 4 (11.7%), oncocytoma 2 (5.8%) chromophobe carcioma 1 (2. 9%).There was no positive margin. All of the cases were resolved with non-surgical treatment. No patients developed local recurrence or distant metastasis.

Conclusion: Laparoscopic partial nephrectomy using 3D imaging was safe, and may be of benefit for complete resection.

UP.244

Treatment of Advanced Kidney Cancer with Antiangiogenic Drugs: Our Experience after a Decade

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Introduction and Objective: Antiangiogenic agents are the treatment of choice for metastatic renal cancer. Since 2007 we have incorporated them into our therapeutic arsenal. We present our results after 10 years of experience.

Materials and Methods: Between April 2007 and December 2016 we treated 94 patients with advanced renal cancer with antiangiogenic agents. 63 (67%) were men and 31(33%) women, with a mean age of 64 years (37-86). 52 (56.5%) of the patients had a Karnofsky score of 100%. Seventy-nine (83.2%) patients underwent a radical nephrectomy, 2 a partial nephrectomy, and in 11 patients no surgeries were performed. Seventy-nine patients (83.2%) had a clear cell RCC, 5 a papillary RCC, 3 a chromophobe RRC, 4 other renal tumours and 3 didn´t have an histological diagnosis. Forty-six (48.9%) patients had multiple metastases, the most common being the pulmonary site in 30 (31.9%). According to the MSKCC risk scale score, 29.3% had good prognosis, 52.2% intermediate and 18.5% poor. As first line treatment, we used sunitinib in 71 (75.5%) patients, sorafenib in 6 and pazopanib in 17; as second line we used axitinib in 19 (45.2%), everolimus in 10, sorafenib in 8, sunitinib in 2 and chemotherapy in 1; as third line we used everolimus in 14 (77.8%), axitinib in 3 and sorafenib in 1. 10 patients were treated in forth line therapies and 3 in fifth line.

Results: Seventy six patients were evaluated according to the RECIST criteria: 7 (9.1%) patients showed a complete response, 33(42.9%) a partial response, 18 (23.4%) had stable disease and 19 (24.7%) progressed. The median of progression-free survival after first-line therapies was 12 months, and the overall survival median was 24 months. 30 patients are still alive. The toxicity has been very variable, requiring a dose reduction in first-line treatments 36 patients (38.7%) after a median of 5 months, and 10 patients required hospital admissions due to side effects.

Conclusions: Antiangiogenic drugs have improved the prognosis of advanced renal cancer, as our results show (75.3% of responses and stabilizations). Most side effects can be managed by the urologist with symptomatic treatment or with dose reduction.

UP.245

Prognostic Factors for Recurrence in Patients with Pathologic Stage T3a Renal Cell Carcinoma

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Introduction and Objective: In 7th edition of the AJCC (American Joint Committee on Cancer) TNM system, renal cell carcinoma (RCC) grossly extended perinephric fat invasion (PFI) or sinus fat invasion (SFI) or renal vein invasion (RVI) defines pathologic T3a (pT3a). This study was conducted to analyze the prognostic values of PFI, SFI and RVI in patients with pT3a RCC.

Materials and Methods: One hundred and two patients who were diagnosed pT3aN0M0 RCC after radical nephrectomy from Keimyung University Dongsan medical center, Kyungpook University medical center and Dongguk University Gyeongju medical center were included in this retrospective study from January 2001 to June 2016. In these patients, the prognostic values of PFI, SFI, RVI, age, tumor size, histology and grade to predict recurrence-free survival were analyzed by Cox proportional hazards models.

Results: There were 50 patients with PFI, 60 patients with SFI, 37 patients with RVI. Total 26 (25.5%) recurrences were observed over a median follow up of 27.7 months (IQR = 17.0-46.5). Median time to recurrence was 17.4 months (IQR = 8.2-26.2). In multivariable analysis, patients with SFI were significantly associated with poor recurrence-free survival (HR=3.69, 95% confidence interval 1.36-9.99, p=0.010). However, there was no statistical significance in other factors.

Conclusion: In pT3aN0M0 RCC, patients with PFI had worse recurrence. However, we think that multi-center studies with a larger size is needed because our study includes a small number of patients.

UP.246

Wunderlich Syndrome - Diagnosis and Treatment Particularities

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Introduction and Objective: Wunderlich syndrome is a rare condition, described for the first time in 1856. The most frequent causes are represented by renal tumors, especially renal cell carcinoma and angiomiolipoma. The clinical presentation depends on the degree and duration of the bleeding. The aim of the study was to evaluate the diagnosis and treatment particularities.

Materials and Methods: Between January 1997 – January 2017 in "Saint John" Emergency Clinical Hospital were diagnosed and treated 12 patients with spontaneous renal rupture. Clinical and imaging aspects as well as therapy options were revised.

Results: From the total number of cases, 8 patients were diagnosed with renal cell carcinoma, 2 with angiolipoma, one with renal cyst and another one with choriocarcinoma. Three patients were admitted with hypovolemic shock, one patient was transferred in our department after retroperitoneal hematoma had been discovered during laparotomy for ectopic pregnancy suspicion. In the other cases the symptoms were: lumbar pain (8 cases), haematuria (6 cases), vomiting (2 cases). In all patients, perirenal collection was described ultrasonographically, the diagnostic being certified by CT. In 9 cases, emergency surgery was necessary. In other 3, the procedure was done after patient re-equilibration. In 10 cases nephrectomy was performed. In one patient with angiolipoma, partial nephrectomy was done. The patient with renal cyst was subjected to cyst resection. No significant complications were encountered.

Conclusions: Wunderlich syndrome is a feared complication of benign or malign renal tumors. Correct and prompt diagnosis is mandatary for an appropriate treatment.

UP.247

Transitional Cell Carcinoma of Pelvic Kidney: A Rare Case with Some Technical Point

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Introduction and Objective: A 49-year-old gentleman referred to me because of mild lower urinary tract symptoms (LUTS) and microscopic hematuria. He was neither smoker nor addicted and was not anticoagulant user. First Abdominal contrast CT (21/Nov./2015) was normal except left pelvic kidney. Second CT showed left pelvic mass. This is fourth case of the literature. Its surgery is a dilemma.

Materials and Methods: A 49-year-old clerk man referred to me because of mild LUST and intermittent hematuria and 2-3 episodes of painless gross hematuria. His physical exam was normal, except mild BPH on digital rectum exam. His contrast abdominal CT (Nov./2015) was normal. I re checked his urine- blood test including PSA, all were normal (except microscopic hematuria). His new renal ultrasound showed mild hydronephrosis and distal hydrometer on the left pelvic kidney. Papanicolao Test for detecting malignancy was normal. His prostate was measured 43x36x38 mm (vol.32cm3). On cystoscopy, there was kissing lobe and random bladder biopsy reported to be extensive urothelial denudation. Then I advised to continue his medication (Alpha blocker) and re assure him. After one month or, he came again and complain of gross Painless hematuria. I asked blood and urine test and another abdominal spiral contrast CT to expert radiologist (June /13/2016). He reported a lobulated mass inside the left pelvic kidney which enhanced after contrast injection, left hydroureter and stenosis of left ureterovesical junction (UVJ).

Results: On his cystoscopy only mild BPH was found. Our attempt to do left ureteroscopy was failed, because of stenosis. Then left nephroureterectomy with excision of bladder cuff, intraperitoneally, through left hockey steak shape incision was performed. The pathologic specimen was low gradeTCC (PTa).

Conclusion: 1) CT scan for diagnosis of microscopic hematuria is inadequate 2) intra-abdominal nephroureterectomy with bladder cuff excision via hockey steak shape incision is safe and fast.

UP.248

Assessment of Factors Affecting Selection of Appropriate Surgical Tactics in the Treatment of Renal Cell Carcinoma

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Introduction and Objective: The radical nephrectomy (RN) and the partial nephrectomy (PN) represent the standard surgical techniques in the treatment of the renal cell carcinoma (RCC). Nevertheless, up to date the strict criteria affecting the selection of the appropriate surgical tactics in RCC treatment are still lacking. The aim of the study was to delineate the principal factors affecting the selection of the surgical tactics in RCC treatment based on multivariate analysis of the major clinical and nephrometric parameters.

Materials and Methods: The clinical data of 903 patients with RCC stages T1-T2, who were surgically treated in 2010-2015, have been analyzed retrospectively. PN was performed in 558 pts. (61.8 %) – group 1; RN in 345 pts. (38.2 %) – group 2. Both groups were matched in terms of the major clinical and demographic parameters: the age (54.2 ± 11.1 years in group 1 and 55 ± 10.9 years in group 2); the gender ratio (61.9 % of males and 38.1 % of females in group 1 and 61.7 % and 38.3 % in group 2); the glomerular filtration rate (86.9 ± 17.8 vs 84.4 ± 19.8 mL/min); ECOG performance status (0.54 ± 0.42 vs 0.5 ± 0.45). To delineate parameters affecting the selection of the appropriate surgical tactics, the univariate and multivariate analysis was used. The following factors were taking into account: tumor size, exo- or endophytic growth pattern, the proximity of tumor to the renal cavitary system, and tumor location – in sinus (n=425), polar (n=285) or lateral (n=193). The volume of the functional renal parenchyma (VFRP) was assessed by the original methodology. All the parameters were based on CT findings.

Results: The univariate analysis demonstrated the following factors contributing to the selection of the appropriate surgical treatment: tumor size (W-Wilcoxon; $p < 0.001$), localization of tumor, polar or lateral ($p < 0.001$ OR polar vs transitional 1.67 (CI 1.07 - 2.63), OR transitional vs sinus 7.2 (CI 5.0 - 10.4) and VFRP (W-Wilcoxon; $p < 0.001$). A multivariate regression analysis comprising 11 parameters was used for predicting PN or RN in RCC patients. When prognostic ROC curves were plotted, the non-linear neural network accounting for three parameters (VFRP, localization and size of tumor) proved as the most optimal (AUC = 0.94 (95 % CI 0.92 - 0.95) with model sensitivity of 85.5 % (95 % CI 81.3 % - 89.0 %) and specificity of 85.5 % (95 % CI 82.3 % - 88.3 %). The nomograms demonstrating how VFRP and tumor size affect the selection of the appropriate surgical treatment depending on the tumor location have been plotted. For RCC with polar localization, VFRP > 58 % should be considered as indication for PN. For RCC located in sinus, the tumor size less than 38 mm on the average should be considered as indication for PN. The analysis allowed us for the development of the novel nephrometric system for the assessment of tumors of kidneys (NCIU nephrometry). NCIU system that takes into consideration both tumor location (Nearness – central location of tumor; Collateral – peripheral location; Inferior – lower location; Upper – upper location) and VFRP allows one for determining precisely the indications for PN or RN.

Conclusion: The multivariate regression analysis demonstrated that the tumor size, the tumor location, and VFRP are the major factors affecting the selection of the appropriate surgical treatment of RCC. NCIU-nephrometry represents objectively the parameters mentioned above allowing for the optimal planning of the surgical strategy in the RCC treatment, namely PN or RN. In case of lateral location of the tumor with VFRP > 58 %, PN should be considered. In case of medial location of the tumor, the size of the tumor is the principal factor affecting the selection of the surgical tactics. The less is the tumor size (fewer than 38 mm), the more likely is PN as the treatment choice.

UP.249

Complication Rate after Partial Nephrectomy with Neoadjuvant Targeted Therapy in Patients with Localized ccRCC

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Introduction and Objective: Use of neoadjuvant targeted therapy (nTT) prior to nephron-sparing surgery is a new approach in managing of complex kidney lesions. The use of TT allows for significant increase in survival of the patients with advanced and metastatic RCC decreasing the size of the primary foci as well. So such strategy may be an option for non-advanced lesions. Although complications profile after such surgeries is not well described. of the study is to assess the influence of the nTT on the complication rate during and after nephron-sparing approach in treatment of localized RCC.

Materials and Methods: We retrospectively analyzed database of 1727 RCC patients treated in the Department of Plastic and Reconstructive Oncourology of the National Cancer Institute from 2008-2016. Forty-one patients that received 2 months of nTT prior to nephron sparing surgery were identified and matched to another group of 41 patients who underwent partial nephrectomy (PN) for similar lesions without nTT. All the clinical data with intra and postoperative complications were analized in the study.

Results: No significant differences between groups were observed in terms of baseline features, oncological outcomes and complications rate, whereas there was a difference in the operation time. That is likely reflects technical peculiarities of neprhon-sparing approach after nTT due to severe adhesive process in retroperitoneal fat.

Conclusion: The nTT in our series of localized RCC provided the average tumor regression of 20.6 ± 15.1 %. Complication rate after TT was comparable to group without nTT, the only difference was found was non-significant increase in operation time. Results of neoadjuvant TT in the RCC are encouraging and more studies needed to evaluate the place of such treatment strategy in management of localized RCC, especially in the setting of downsizing tumor for safer subsequent organ-sparing surgery.

UP.250

Quality of Life in Partial Nephrectomy: Single Center Experience

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Introduction and Objective: Partial nephrectomy is the accepted procedure of choice in benign renal lesions requiring excision and in certain malignant conditions. We hereby describe Partial nephrectomy experience in 40 patients terms of safety and efficacy and Quality of life.

Materials and Methods: Partial nephrectomy was done by open technique in 40 patients. Data regarding patient age, gender, BMI, presenting symptom, tumor size & site on CT scan, histology, post op complications and recurrence on follow up CT scan at 6 months and at 12 months by chart review. SPSS version 16 was used for data analysis. short form-36 (SF-36) questionnaire was used to assess the quality of life in these patients.

Results: A total of 40 patients with a mean age of 46.5±1.54 years were included. 28 (70%) were male and 12 (30%) were females. The mean BMI was 27.89±5.67. Mean size of renal mass on CTscan was 3.80±1.15cm. One patient needed DJstent for persistent urine leak in drain. Mean hospital stay was 5.1±1.41 days. Mean operating time was 248±79.72 minutes. Mean preoperative Hb was 13.73±1.66 g/dl and mean drop in Hb on first post operative day was 1.61±1.20 g/dl. None had developed sepsis or wound infection. The mean preoperative creatinine clearance was 103.11±3.07 ml/min and the mean drop in creatinine clearance at six months was 14.52±1.41 ml/min. The 24 patients with malignant histology were followed with CT scan at 6 and 12 months and out of which 20 (83.3%) patients had no recurrence at six months to one year. Physical function was 45.3±14.2, General health score was 42.4±11.3 and Mental health was 42.4±8.23. Social function also improved after the procedure.

Conclusion: Partial Nephrectomy is a safe and effective procedure which can be done without major complications. Physical, mental and social scores of quality of life were improved in patients after the partial nephrectomy.

UP.249, Table 1.

Preoperative Features	PN with nTT; n = 41	PN without nTT; n = 41	p
Gender M : F, n	29 : 12	30 : 11	0.68
Mean age, years	54.4 ± 9.4	55.3 ± 8.2	0.82
Mean tumor diameter, cm	59.2 ± 17.5	62.1 ± 18.4	0.57
Mean preoperative creatinine, mg/dL	0.9 ± 0.1	0.9 ± 0.1	0.91
Mean preoperative hemoglobin, g/dL	12.7 ± 17	12.9 ± 18	0.81
Mean GFR, ml/min	86.7 ± 14.1	89.2 ± 12.2	0.49
Intra-operative outcomes			
Operative time, min	103 ± 19	871 ± 23	< 0,001
Mean estimate blood loss, ml	417 ± 215	345 ± 155	0.19
Post-operative outcomes			
Clavien-Dindo complication grade, n (%)			
- 0	30 (73.2)	32 (78)	0,81
- 1	7 (17.1)	5 (12.2)	
- 2	3 (7.3)	2 (4.9)	
- 3	1 (2.4)	1 (2.4)	
> 4	0	1 (2.4)	
Positive margin rate, n (%)	2 (4.9)	1 (2.4)	0,56

UP.251

Renal Cell Carcinoma with Synchronous Solitary Mucosal Bladder Metastasis and Its Treatment Options: A Case Report

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Introduction and Objective: It is well known that Renal Cell Carcinomas (RCC) commonly metastasize to liver, lung, adrenal, bone and brain. Rarely, RCC metastasizes to the urinary bladder. Bladder metastasis in RCC can be synchronous or metachronous. In our case report, we present a purely mucosal synchronous bladder metastasis from RCC presenting with painless gross hematuria.

Materials and Methods: A 75 years old female with hypertension, asthma, hypothyroidism, presented with total painless, gross hematuria. On evaluation, she was found to have exophytic left renal mass along with a polypoidal bladder mass. There was no other evidence of metastatic disease in lung, liver and bone on CT scan. She underwent Transurethral Resection of Bladder Tumor (TURBT) followed 5 days later by Laparoscopic left radical nephrectomy. Histopathological diagnosis of the renal tumor was Clear Cell variant of Papillary RCC (Fuhrmann grade3), stage T3aN0.

Results: Histological examination revealed that the bladder tumor was Clear Cell variant of Papillary RCC with invasion of lamina propria with muscularis propria free of tumor. Immuno-histochemical profile of both the tumors was similar. (Table). Hence, the patient was diagnosed to have solitary synchronous metastasis to urinary bladder from RCC of left kidney with final staging being T3aN0M1.

Conclusion: Most of the metastases to bladder from RCC involve the muscularis propria, but when muscularis propria is free, as in this case, radical nephrectomy with TURBT becomes the treatment of choice. By excising the entire disease, patient can be spared of targeted therapy at an earlier stage, which can be saved for later date if and when these patients present with demonstrable metastases.

UP.251, Table 1.

Marker	RESULT
Vimentin	Positive
CD10	Positive
PAX 8	Positive
CD7	Negative

UP.252

What Is the Best Score to Predict Surgical Complications after Partial Nephrectomy?

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Introduction and Objective: Partial nephrectomy (PN) is the standard option for treatment of renal tumors less than 4 cm. We notice a significant number of specific complications with PN. Some authors described scores based on radiological features that can predict surgical complications. The aim of this work is to compare the RENAL score (tumor specific factors) and MAP score (the presence of adherent perirenal fat) in term of intra operative and post operative complications.

Materials and Methods: We retrospectively evaluate patients treated with partial nephrectomy for renal tumor between 2000 and 2015. Clinical and pathological data, including localization, size, RENAL score and MAP score, were analyzed. Univariate and multivariate regression models were used to assess the impact of these variables on the complications during or after surgery.

Results: Overall complication rate was 12% (one ureteric lesion and 6 hemorrhagic complications). In bivariate analysis, the RENAL score was statistically relevant (p=0.05) in difficult dissection and total nephrectomy conversion rate. In multivariate analysis, only RENAL score was identified as a predictive factor of conversion to total nephrectomy, and difficult dissection. Also, RENAL score was significantly good predictor than MAP score in term of hospital stay, post operative transfusion rate, urine leakage and mortality.

Conclusion: In our experience, the RENAL score is more specific than MAP score and appears like the major predictive factor of complications in PN

UP.253

Comparison Nephron-Sparing Techniques for Patients with Ct1-2 Stage Renal Masses

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Introduction and Objectives: The aim of our study was to compare radiofrequency ablation (RFA) versus open partial nephrectomy (OPN) and laparoscopic partial nephrectomy (LPN) for clinical T1-2 renal masses.

Materials and Methods: We included 808 patients (pts) whom performed nephron sparing and ablative techniques from database containing 1781 localized and locally-advanced RCC pts. We performed LPN in 360 (44.5%) pts and OPN in 378 (46.8%) pts and RFA – in 70 (8.7%) pts. More tumors in OPN group were larger size and endophytic and centrally located (52,1%) p<0.05.

Results: Mean age of pts in OPN group was 55.2 years (23-79) and in LPN group - 56.4 years (16-79) and RFA group 68.5 years (46-84), p=0.09. Comorbidities impact on kidney function were diagnosed more often in RFA group of pts (32.8%) compared with group OPN (10.8%) and LPN (10,2%), p<0,01. Largest median tumor size was in OPN group - 35 (11-180) mm compare 25 (10-85) mm in LPN group and 28 (11-45) mm in RFA group, which was associated with selection of pts (p<0.05). Median operative time in LPN group was significantly lower and was 120min. (60-360), compare to OPN - 165 (60-410) min and in RFA group - 13min. (6-26); p<0,05. Median blood loss was lower in LPN group and amounted to 150ml (interquartile range (IQR) 50-300ml) and for patients who underwent OPN - 500ml (IQR 300-700ml) p<0.001. Median warm ischemia time was longer in LPN group - 22 min (17-27) and in group OPN 15min (11-20), p<0.001. Frequency of intra - and postoperative complications in pts who underwent OPN, LPN and RFA was comparable and amounted to 7.4%; 6.6% and 4.2%; respectively. Five-year progression-free survival (PFS) was significantly lower in RFA group (69.9%) than in OPN (94.9%) and LPN groups (95.2%), p<0.01. Longer five-year cancer-specific survival (CSS) were in LPN group (98.9%), and in OPN group - 95.7% compare RFA group - 94.3% (p=0.04).

Conclusions: LPN is associated with lower operative time, blood loss, low rate of complications and comparable functional and oncological results with OPN. RFA may be recommended to elderly pts with severe comorbidities, and despite high rate of relapse, this procedure can be comparable to nephron sparing techniques regarding to CSS.

UP.254

Clinical Analysis of Urinary Biomarkers Predictive of Renal Injury Due to Tyrosine Kinase Inhibitors for Advanced Renal Cell Carcinoma

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Introduction and Objectives: A side effect of tyrosine kinase inhibitor (TKI) use for advanced renal cell carcinoma is proteinuria. Most proteinuria is reversible, but an increase in urine protein can cause nephrotic syndrome and irreversible renal failure. Thus, prediction of proteinuria is very important in treatment with a TKI. We evaluated urinary biomarkers for their ability to predict an increase in urine protein.

Materials and Methods: We examined 22 patients with progressive renal cell carcinoma in our department from August 1, 2014 to August 31, 2016. We measured urinary nephrin, an indicator of glomerular epithelial cell damage, and urinary beta-2 microglobulin (β2-MG), N-acetyl-β-D-glucosaminidase (NAG), and liver-type fatty acid binding protein (L-FABP), which are indicators of renal tubular damage, using semiquantitative methods before and after TKI treatment.

Results: TKIs used in this study were pazopanib, axitinib, sunitinib, and sorafenib. We compared urine protein with urinary biomarker levels obtained before treatment. We also performed correlation analysis to determine whether an increase in urinary biomarkers was associated with increased proteinuria. The results showed increases in proteinuria and all biomarkers with TKI administration. Furthermore, a positive correlation was found with nephrin (r=.430, P <0.0001), β2-MG (r=.319, P <0.0001), NAG (r=.252, P =0.002), and L-FABP (r=.497, P <0.0001).

Conclusion: This study was performed to identify biomarkers predictive of adverse effects with TKI treatment. Proteinuria is thought to result from TKI-induced vascular endothelial growth factor inhibition in the glomerular capillary wall. In this study, biomarkers of both renal tubular damage and glomerular epithelial cell damage were significantly increased. Proteinuria caused by TKI treatment may also be associated with tubular impairment. To identify a specific biomarker for use in prediction of renal failure caused by TKI treatment, more cases must be investigated.

UP.255

Renal Carcinoma with Sarcomatoid Cells: Concerning 10 Observations

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Introduction and Objective: Kidney cancer accounts for 2-3% of all malignant tumors of the adult. Sarcomatoid renal cell carcinoma is a special entity that represents 1 to 8% of renal tumors. These carcinomas are recognized by their aggressiveness and their fearsome prognosis. The aim of our work is to specify the clinical, radiological, anatomopathological and evolutionary characteristics of this type of cancer.

Materials and Methods: We conducted a descriptive and retrospective analysis of 10 cases of sarcomatoid renal cell carcinomas, collected in the urology department at the hospital HABIB BOURGUIBA of Sfax, during a period of 26 years (1990-2015), among 281 kidney tumors taken over in the department.

Results: The average age of discovery was 36 years; sex ratio was 1. These tumors were symptomatic in 90% of cases. The thoraco-abdomino-pelvic CT was the baseline examination for the diagnosis and the evaluation of locoregional extension. The standard anatomopathological examination supplemented with an immunohistochemical exam confirmed the presence of the sarcomatoid contingent and identified the carcinomatous contingent represented by clear-cell carcinoma in 6 patients, tubulo-papillary carcinoma type 2 noted in three cases and chromophobic carcinoma in only one case. All our patients were treated surgically by radical nephrectomy. The potential of the tumors was studied with an average follow-up of 13 months and an average survival of 7.85 months, eight patients had died.

Conclusion: Sarcomatoid renal cell carcinomas are considered as tumors with unfavorable evolution. Their prognosis is closely related to the pTNM stage, the histology of the carcinomatous contingent and especially to the rate of the sarcomatoid contingent as well as the presence of vasculo-lymphatic embolisms and tumor necrosis. Cytogenetics factors constitute prognostic parameters under evaluation.

UP.256

Chromophobe Renal Cell Carcinoma (About 18 Cases)

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Introduction and Objective: Chromophobe renal cell carcinoma (CRCC) is a rare tumor representing only 5% of the kidney tumors. It is reputed to have good prognosis. The prognostic factors of this tumor are incompletely determined, which poses a management problem. The aim of our work is to specify the clinical, radiological, anatomopathological and evolutionary characteristics of this type of cancer.

Materials and Methods: Our study consisted of a descriptive and retrospective analysis of 18 cases of CRCC from 214 patients operated for renal tumors in urology department at the Habib Bourguiba Hospital in Sfax, over a period of 16 years (2000-2016).

Results: The average discovery age was 54 years. There were 10 men and 8 women. These tumors were symptomatic in 11 cases. An enlarged nephrectomy was performed in 13 cases, partial nephrectomy in 4 cases and the last case was a simple tumorectomy. The mean tumor size was 9.4 cm. A tumor was associated with lymphangitis carcinomatosa and another invaded the peri-renal fat. After an averageof 31 months period, the evolution was favorable with no local or regional recurrence metastasis for 17patients. We deplore a death with bone and pulmonary metastases.

Conclusion: Renal carcinoma with chromophobic cells remains of good prognosis. Long-term monitoring should be ensured in all cases given the possibility of metastasis even long term after curative treatment.

UP.257

Exceptional Histological Type of Renal Tumor: Kidney Primitive Angiosarcoma (About a New Case)

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Introduction and Objective: Kidney angiosarcoma is a very rare tumor, most often of metastatic order. Primary renal localization is exceptional that only about forty cases have been recorded in the international literature.

Materials and Methods: This is a 59-year-old patient without particular pathological medical history, who consulted for right lumbar pain with hematuria. The clinic review regained an alteration of the general state with a clear lumbar contact, compatible with a mass of renal origin. Ultrasound had suspected the diagnosis of right renal tumor. The abdomino-pelvic CT scan confirmed the presence of a weakly vascularized medially-renal tumor tissue mass with invasion of the excretory cavities and extended to the lower pole of the kidney. The patient was operated by lumbotomy, and a right radical nephrectomywas performed with retroperitoneal adenopathy resection. Operating suites were simple.

Results: The pathologic examination concluded to a renal angiosarcoma classified pT4N1. The evolution was marked by an alteration of the general condition with patient's death 1 month postoperatively.

Conclusion: Primary renal angiosarcoma is an exceptional tumor. It is characterized by its hemorrhagic component and a very high malignancy potential with often metastatic disease at the time of diagnosis. The absence of coded treatment for kidney angiosarcoma is due to the fact that this type of tumor is very rare. However, surgery, consisting of radical nephrectomy, remains the first-line treatment.

UP.258

Renal Oncocytoma (About 18 cases)

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Introduction and Objective: Renal oncocytoma is a rare benign tumor representing 4 to 8% of renal tumors. There is no formal diagnosis before preoperative. Diagnostic certainty remains histological, although some radiological aspects seem highly evocative. The therapeutic attitude remains controversial. Our aim is to study the clinical, radiological, therapeutics of this type of tumor.

Materials and Methods: Retrospective study of 18 patients operated on oncocytoma renal tumors from 258 cases of renal tumors over a period of 26 years (1990-2016).

Results: The average age of our patients was 52 years (37-69 years), with male predominance and a sex ratio of 1,4. The most affected side was the right side. The mode of revelation was most frequently lumbago (11 cases), palpable lumbar mass (2 cases) and hematuria (1case). The remaining cases were accidentally diagnosed. The diagnosis has been suggested by ultrasound and CT in all patients, but diagnosis was certainty retained only after histological examination of the surgical piece. A total radical nephrectomy was performed in 12 cases and conservative treatment in 6 cases: partial nehrectomy (4 cases) and tumorectomy (2 cases). The mean size of the tumor was 5.4cm (2-14.5cm). In all cases, there was no lymph node invasion or metastasis. The mean follow-up was 38 months (17- 61 months) with a favorable outcome in all cases, without signs of recurrence or tumor progression.

Conclusion: Renal oncocytoma is a rare benign kidney tumor. All imaging techniques can not make acertain diagnosis. This diagnosis remains anatomopathological. Despite the excellent prognosis of this tumor, we still lack reliable diagnostic means to avoid abusive radical nephrectomies. The conservative treatment should be considered whenever there are clinical and especially radiological signs of presumption.

UP.259

Tubulopapillary Carcinoma of the Kidney (About 35 Cases)

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Introduction and Objective: Kidney cancer accounts for 2-3% of all malignant tumors disease of the adult and is the 3rd most common urological cancer. A particular entity which is tubulo-papillary renal cell carcinoma is now well individialised and its frequency is clearly increasing with the progress of medical imaging. It is proposed to study the diagnostic, therapeutic, evolutionary and prognostic aspects of these tumors.

Materials and Metods: Our study consisted of a descriptive and retrospective analysis of 35 cases of renal carcinoma with tubulo-papillarycells among 258 patients operated on renal tumors, collected in our urology department over a period of 26 years (1990-2016).

Results: The average age of discovery was 60 years; sex ratio was 3.14. These tumors were symptomatic in 38% of cases. The thoraco-abdomino-pelvic CT was the reference examination for the diagnosis and the evaluation of locoregional extension, showing a heterogeneous appearance of the tumor in 72% of the cases, with a heterogeneous enhancement after injection of contrast medium. Anatomopathologic standard examination supplemented by an immunohistochemical study confirmed the diagnosis and established a histological subtyping in type 1 and type 2. All our patients were surgically treated, 59% of the cases were treated with enlarged nephrectomy and 41% had conservative treatment. Two patients received adjuvant medical treatment. The progressive potential of tumors was studied with an average follow-up of 35 months. The evolution was favorable for 76% of patients.

Conclusion: Tubulopapillary carcinoma is considered as an evolutionary tumor usually favorable, and particularly for type 1. Its prognosis is closely linked to the pTNM stage, the Führman nuclear grade, the histological type and the index of proliferation.

UP.260

Outcome of Everolimus Treatment for Amgiomyolipoma Associated with Tuberous Sclerosis Complex

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Introduction and Objectives: In Japan, everolimus was approved for treatment of TSC-AML in 2012. To evaluate the efficacy and toxicity of everolimus in Japanese patients with renal angiomyolipoma (AML) associated with tuberous sclerosis complex (TSC).

Materials and Methods: Between June 2013 and November 2016, 15 patients with 4cm or larger AML associated with TSC were treated with everolimus. In each case, the treatment effect and adverse events were assessed.

Results: The median age of the patients was 24 years (range 15-50 years). Median size of AML was 7.7cm (range 4.3-10.5cm), and 4 patients were previously treated with transcatheter arterial emblization (TAE). Everolimus was given at doses of 5 and 10mg in 1 and 14 patients, respectively. The AML volume decreased in all patients, and 6 (40%) patients was decreased 50% or more. All patients developed some adverse

events, and the main adverse event related to everolimus treatment was stomatitis (86.7%). In two patients, grade 3 or severer stomatitis was noted, but the symptom was improved promptly.

Conclusions: Everolimus treatment to TSC-AML was effective in bleeding prevention by decreasing of tumor volume, but treatment intervention time and a treatment continuance period seemed to be controversial.

UP.261

JuRoLap: A Resilient and Economical Home-Made Specimen Retrieval Bag

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Introduction and Objective: Specimen retrieval bags were used to remove cysts and masses in minimally invasive urologic surgeries for more than 3 decades. We described the safety, cost-effectiveness and resiliency of the JuRoLap as experienced by a single surgeon in Jose R. Reyes Memorial Medical Center from January 2011 to December 2015.

Materials and Methods: Our homemade retrieval bag (JuRoLap) is composed of a PVC Urine Bag custom fitted according to the expected specimen size by sealing the sides with an impulse sealer leaving one side open. Then, a 2-0 Nylon is sutured using a purse-string technique to seal the opening. These bags are rolled and introduced intracorporeally via the 12mm port. The bag is then opened followed by placement of specimen using standard laparoscopic instruments. Purse-string suture is tightened and specimen bag is extracted through the selected port extending the incision as necessary.

Results: JuRoLap was used in 33 cases removing various organs such as adrenals, kidney, ureter, bladder and prostate. It was easily prepared, safe, resilient and economical costing approximately $ 0.68. It was essential to routinely check its durability by doing a leak test prior to sterilization. Proper rolling, transparent plastic component of the bag and the use of two laparoscopic graspers provided ease in bag deployment and specimen entrapment. It was also observed that smaller incision on extraction site as compared to the specimen size was needed due to the resiliency of the bag. Despite the required learning curve in organ entrapment and extraction, there was no noted specimen leakage, bag disruption and loss of specimen within the abdominal cavity in all the cases. Complications such as injury to adjacent organs, peritoneal or surgical site infection and intestinal obstruction were not observed.

Conclusion: JuRoLap specimen retrieval bag is organ size specific, safe, resilient and low-cost specimen retrieval innovation. However, further prospective study is recommended to compare it with the commercial bags in the ease of specimen entrapment and extraction.

UP.262

Randomized Study of Ureteral Catheter vs Double-J Stent in Tubeless Minimally Invasive Percutaneous Nephrolithotomy Patients

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Introduction and Objective: To prospectively analyze and compare the outcomes of using externalized ureteral catheter (EUC) vs Double-J ureteral stent (DJ) in tubeless minimally invasive percutaneous nephrolithotomy (MPCNL).

Materials and Methods: A total of 109 patients underwent tubeless MPCNL in our institute and have been enrolled into this study. Fifty-six and 53 patients had EUC and DJ positioning at the conclusion of the procedure, respectively. The two approaches have been compared for operative time, intraoperative blood loss, postoperative visual analogue pain scale (VAS) score, analgesic requirement, stent-related symptoms, hospital stay, degree of vesicoureteral reflux (VUR) on the operative side, and complications according to the modified Clavien system.

Results: There were no statistically significant differences between the two groups regarding the mean operative times, mean VAS scores, analgesic requirements, mean hemoglobin drop, mean hospital stay, and overall complication rate. However, compared with DJ group, EUC group presented fewer postoperative stent-related symptoms and less occurrence of severe VUR ($p < 0.05$).

Conclusion: Positioning EUC in tubeless MPCNL is a safe alternative to DJ in patients with renal or upper ureteral calculi. EUC provides several benefits: obviated the need of a second endoscopic procedure, reduced stent-related discomfort, and lowered the occurrence of severe VUR.

UP.263

Comparison of Effect of Minimally Invasive Percutaneous Nephrolithotomy on Split Renal Function: Single Tract vs Multiple Tracts

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Introduction and Objectives: To observe serum creatinine (SCr) and treated side glomerular filtration rate (TGFR) variations in patients with upper urinary tract calculi after minimally invasive percutaneous nephrolithotomy (MPCNL).

Materials and Methods: A total of 178 patients underwent MPCNL in our institute and they were retrospectively evaluated between May 2014 and February 2016. SCr and TGFR variations were observed with renal scintigraphy using 99mTc-diethylene triamine pentaacetic acid (99mTc-DTPA) preoperatively and after at least 6 months of follow-up (FU). The patients were categorized into two groups according to the number of percutaneous access tracts: group I (single tract, n=122) and group II (multiple tracts, n=56).

Results: At a mean FU of 7.6 months, SCr dropped from 192.9 ± 151.9 umol/L to 167.6 ± 113.9 umol/L (13.15% decrease, p=0.008) and TGFR increased from 29.8 ± 21.2 ml/min preoperatively to 32.7 ± 22.5 ml/min postoperatively (9.79% increase, P=0.022) in group I. Similarly, SCr dropped from 238.5 ± 130. One umol/L to 215.8 ± 128.1 umol/L (9.50% decrease, p=0.013) and TGFR increased from 29.6 ± 21.4 ml/min preoperatively to 32.9 ± 25.1 ml/min postoperatively (11.17% increase, P=0.014) in group II. No statistically significant difference between two groups according to SCr or TGFR variation was observed (P>0.05).

Conclusions: Stone clearance resulted in improvement of split kidney function after single tract or multiple tracts MPCNL. Single tract or multiple tracts MPCNL didn't show statistically significant difference in split renal function postoperative recovery.

UP.264

4-Year Oncologic and Functional Outcomes after Minimally Invasive Treatment for Renal Masses in Elderly Patients

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Introduction and Objectives: Nowadays, many elder patients with operable renal cancer die of non-cancer-related causes. Due to this concept, cancer therapy should be based on patients' functional age rather than the chronological age. Our aim was to assess the long-term oncologic and functional outcomes in elderly patients after robot-assisted partial nephrectomy (RAPN) in a single tertiary center.

Materials and Methods: Patients ≥70 years undergoing RAPN for localized renal cancer between July 2009 and March 2016 were analyzed from our institutional customized database. All data were prospective collected and retrospectively analyzed. Local Ethics Committees have approved the study and written informed consent to take part was given by all participants. All patients were stratified according to PADUA classification system in three groups: < 7 points, 8-9 points, > 10 points. Univariable and multivariate binary logistic regression analyses were performed to determine variables associated with trifecta accomplishment. The Kaplan–Meier method was used to estimate survival. Statistical analyses were performed using Stata 11.0 statistical software (Stata Corp., College Station, TX, USA).

Results: Fifty-two patients were included in the study. Median follow-up was 47 months (IQR 32 to 64.5). Mean age was 74.4 (range 70 to 83 years). Complication rate was 15.4%, (8 patients); 4 patients (7.7%) received transfusions; 4 patients (7.7%) presented Clavien score >2 (3 patients grade 3a; 1 patient a grade 3b). Univariate logistic regression for predicting trifecta non-accomplishment showed that PADUA score (OR 1.6, CI 1-2.56, p=0.04), PADUA complexity stratification (OR 2.66, CI 1.07-6.59, p=0.03), tumor diameter on CT (OR 1.06, CI 1.0-1.12, p=0.04) and OT (OR 1.01, CI 1.0-1.02, p=0.02) were predictive

factors. The MFS, OS and CSS were 89.33%, 90.06% and 94.4% respectively. Distant metastases occurred in 4 (7.7%) patients and none presented local recurrences. Five patients (9.6%) died during follow-up, 3 of them (5.7%) died due to cancer.

Conclusion: At a high-volume center, the robot-assisted approach is feasible and safety in surgical fit elderly patients with good long-term oncologic outcomes. Tumor diameter and longer operation time predicts trifecta and might be taking into consideration when planning a RAPN in over 70 years age patients.

UP.265

Comparison of Double J-Stent Position versus Tamsulosin versus Tamsulosin with Tolterodine in Controlling Stent Related Symptoms after Ureteroscopic Lithotripsy: A Randomized Controlled Trial

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Introduction and Objective: Ureteral stent placement after ureteroscopic lithotripsy is associated with stent-related symptoms. This study focused on the effect of stent position and medications (α-blockers & anticholinergics) in preventing stent-related symptoms using Ureteral Stent Symptom Questionnaire (USSQ) as the assessment tool.

Materials and Methods: One hundred and fifty patients who underwent ureteroscopic lithotripsy with an indwelling stent were distributed into three groups. On demand analgesics were given to group 1 i.e. DJ stent position (n=50), Tamsulosin 0.4 mg daily for group 2 (n=50) and Tamsulosin 0.4 mg and Tolterodine 4 mg daily for group 3 (n=50). The patients were also subclassified into appropriate or inappropriate group according to stent position. All patients completed various domains of USSQ on 1st and 7th postoperative days. Statistical analysis was performed by using Pearson's chi-square test, Student's unpaired t-tests and ANOVA tests with an EPI-Info statistical software package.

Results: In control group, patients with appropriate stent position had significantly lower symptom scores than those with inappropriate stent position (p value~0.0001) in all domains of USSQ except global quality of life score (p value 0.08). Addition of Tamsulosin 0.4mg (group 2) had superadded beneficial effect in appropriate position group, but not in patients with inappropriately positioned stents. Patients taking both Tamsulosin 0.4mg and Tolterodine 4mg (group 3) had no significant improvement in symptom scores both in the appropriate position group (all domains of USSQ) and inappropriate position group (most domains).

Conclusion: Appropriate stent position is the most important independent factor than medications in preventing stent related symptoms. Tamsulosin has a superadded benefit in patients with correctly positioned stents.

UP.266

Robot-Assisted versus Minimum Incision Endoscopic and Laparoscopic Prostatectomy: Perioperative Outcomes and Complications from the First 100 Cases of Each Procedure with a 1-Year Follow-Up

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Introduction and Objective: Radical prostatectomy is the standard treatment for patients with localized prostate cancer. Minimum incision endoscopic prostatectomy (MIE-RP), laparoscopic prostatectomy (LRP), and robot-assisted prostatectomy (RALP) have been performed as minimally invasive procedures in Japan. This study aimed to compare perioperative outcomes and complications from the first 100 cases of each procedure.

Materials and Methods: The first 100 cases of MIE-RP, LRP, or RALP each were retrospectively evaluated. Age, operative time, estimated blood loss, surgical margins, complications, and continence rate were compared among these procedures.

Results: The median age of the patients was 68.0 years in MIE-RP, 68.5 years in LRP, and 69.0 years in RALP. The median operative time and estimated blood loss were 250, 274, and 281 min, and 550, 450, and 150 ml, for MIE-RP, LRP, and RALP, respectively. The operative time in MIE-RP was significantly shorter than those in the other procedures, whereas the estimated blood loss in MIE-RP was significantly greater. Positive surgical margin rates in MIE-RP, LRP, and RALP were 25%, 28%, and 20%, respectively. Major complications (over Clavien-Dindo classification Grade 2) were seen in 4% of the cases in MIE-RP, 7% in LRP, and 4% in RALP. No significant difference was identified among MIE-RP, LRP, and RALP in the rates of return to continence (89%, 89%, and 88% after 1 year, respectively). When the 100 cases of each procedure were further divided into three subgroups, a rapid learning curve was observed in RALP with regard to the operative time.

Conclusion: MIE-RP, LRP, and RALP were safe and feasible treatment methods in patients with localized prostate cancer. The operative time was the shortest in MIE-RP, whereas the estimated blood loss was the least in RALP. No significant difference was seen among the three procedures with respect to the rates of return to continence after 1 year. A rapid learning curve was observed in RALP with regard to the operative time. In conclusion, RALP should be globally adopted in the treatment of localized prostate cancer.

UP.267

Robotic Partial Nephrectomy for High-Complexity Tumor

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Introduction and Objectives: Partial nephrectomy (PN) is the current standard of care for the treatment of localized renal tumor. The oncological equivalence and better functional outcomes of PN have been widely reported in comparison with radical nephrectomy (RN) for small-sized renal tumors. Recently, there has been a progressive diffusion of the use of robotic-assisted PN (RAPN), which reduces the technical challenges associated with tumor excision and parenchymal reconstruction. Although RAPN was initially used for small and exophytic renal tumors, the growing experience has progressively allowed the treatment of larger, and more complex renal masses. In this retrospective study, the technical feasibility outcomes and complications in RAPN for high-complexity tumors (HCT) were evaluated from our experienced cohort.

Materials and Methods: Since 2010, we have carried out 135 cases of RAPN. We have analyzed 125 cases which excluded 10 caes during learning-curve. Out of 124 cases, 60 (45.6 %) included high-complexity tumors (HCT) such as large sized > 4 cm (T1b) in 24, hilar-located in 17 and highly endophytic properties > 80% in 24. These high-complexity factors were analyzed whether they affected on perioperative outcomes like console time, warm ischemic time (WIT), estimated blood loss (EBL) and complications or not.

Results: All pathological results revealed RCC except four cases of AML (angiomyolipoma) and one cases of abscess without any positive surgical margins. The average console time, WIT and EBL was 121 min, 17.2 min and 89 mL in whole 125 cases, respectively. In regard to WIT, T1b cases showed significantly longer than the rest of cases (T1b 20.8 vs T1a 16.3 minutes; p = 0.0002). Moreover, T1b and highly-endophytic cases developed significantly larger amount of EBL than the rest of cases (T1b 195 mL vs T1a 64 mL; p = 0.032, endophytic 184 mL vs exophytic 92; p = 0.042). Between hilar located tumor and non-hilar cases, no significant differences were noted on console time, WIT or EBL. There were no severe perioperative complications such as conversion to open or RN. Perioperative blood transfusion was needed for three cases (2.4 %) only for T1b. As postoperative complications, two cases of pseudoaneurysma were noted in each one for T1b and non-HCT case.

Conclusion: Within retrospective limitations, RAPN was thought to be feasible and safe even for the high-complexity renal tumors. Among high-complexity factors, T1b and highly-endophytic tumors developed longer WIT and larger blood loss, but not in hilar-located cases even with same level on RENAL nephrometry score.

UP.268

Outcomes of Ureteroscopic Double J Ureteral Stenting for Distal Ureteral Injury after Gynecologic Surgery

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Introduction and Objective: Ureteral injuries are well-known complications of any gynecologic surgery. We evaluated the safety and feasibility of ureteroscopic Double J (DJ) ureteral stenting in patients with a distal ureter injury due to gynecologic surgery.

Materials and Methods: Eleven consecutive patients with an iatrogenic ureteral injury in the distal ureter

secondary to gynecologic surgery underwent DJ ureteral stenting between March 2008 and January 2016. Ureteral leakage and ureteral stricture were appraised by intravenous pyelography. We evaluated the operative and clinical outcomes of these patients.

Results: The DJ ureteral stent was successfully inserted using ureteroscopy in all patients. None of the patients showed major or minor complications during the intraoperative and perioperative follow-up periods; however, in one patient, the DJ ureteral stent migrated downward after a successful placement. Intravenous pyelography performed every 3 months during the follow-up period verified recovery at the ureteral injury site without any urine leakage. However, five patients experienced ureteral stricture. Balloon dilatation or Holmium laser endoureterotomy was performed successfully in all patients with ureteral strictures. One patient with recurring ureteral stricture was again treated using Holmium laser endoureterostomy and balloon dilatation and, as of the last follow-up visit, there has been no recurrence. The overall long-term success rate was 100% with a mean follow-up duration of 20.4 months.

Conclusion: DJ stenting using ureteroscopy diminishes the necessity for invasive surgical procedures and is regarded as one of the available management option in patients with an iatrogenic ureteral injury, before the consideration of an invasive operation. However, since ureteral stricture is frequently occurred after ureteroscopic procedures, it is essential to select the appropriate patients.

UP.269

Safety Profile and Cost Analysis of Reused Disposable Laparascopic Instruments in CiptoMangunkusumo Hospital, Jakarta, Indonesia

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Introduction and Objective: Studies regarding laparoscopic procedure has been focused on its cost, durability, upkeeping, and repairment cost, which will be important in the future. The aim of reusing instruments should reduce a cost without an affecting procedure quality. Until now, there is no sufficient data are available regarding to the effects of using reusable instrument to service quality.

Materials and Methods: The data used on this study were retrospectively collected between January to December 2015. Total sampling method was used to collect data to all patients undergone laparoscopic procedures using resterilized laparoscopic instruments at urology operating rooms Cipto Mangunkusumo General Hospital (RSCM). The resterilized laparoscopic instruments used were harmonic scalpel handpieces, retroperitoneal balloons and pumps, laparoscopic trocars number 5, 10, and 11. Sterilization procedures were performed using plasma method in Sterilization Center RSCM.

Results: The specimens were swabbed from laparoscopic trocars, retroperitoneal balloon, and harmonic scalpel hand pieces. All of the results came negative. We evaluated 63 patients underwent laparoscopic procedures using resterilized laparoscopic instruments at urology operating rooms in RSCM between January to December 2015.Infection rates in trocar laparoscopic wounds was 1 (2.6%) and the rate of patients who experienced an increase in temperature greater than 37.5 C (Fever) after the surgery was 1 (3.2%). We obtained a difference in cost as much as Rp. 2.074.000 (9.7 times less) in the reuse of disposable trocar laparoscopic instruments. The reuse of re-sterilized harmonic hand piece will enable us to save Rp. 8.945.000 (3.5 times less) and last every each of retroperitoneal balloon that has been sterilized saved us Rp 862.500 (3,5 times less)

Conclusion: The reuse of disposable laparoscopic instruments was able to reduce the cost of laparoscopic surgery with low complication rate thus can be safely performed.

UP.270

The En-Bloc No-Touch Holmium Laser Enucleation of the Prostate

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Introduction and Objective: Although Holmium laser enucleation of the prostate (HoLEP) is currently considered a safe and effective therapeutic option for the treatment of adenomas of any size, it has problems such as technical difficulties , long learning curve and operative time and postoperative incontinence. We modified the technique with en-bloc no-touch enucleation technique, trying to overcome difficulties.

UP.269, Table 1. Bacterialpattern from Swabbing and Culture after Sterilization

Laparoscopic Instruments	Swab and Culture Results		
	1	2	3
Laparoscopic trocars	Negative	Negative	Negative
Retroperitoneal balloon	Negative	Negative	Negative
Harmonic scalpel handpieces	Negative	Negative	Negative

UP.269, Table 2. Characteristics of Patients Undergone Laparoscopic Procedures Using Resterilized Instruments

Variables	n=63
Sex	
• Male	40 (63.5)
• Female	23 (36.5)
Age (median (min-max)) (year)	53 (2-73)
Health insurance (n(%))	
• JKN	54 (85.7)
• Without Insurance	9(14.3)
The length of hospitalization (median(min-max)(days)	5(2-15)
The length of surgery (median(min-max)(minutes)	150(50-420)
Temperature (median(min-max) (Celcius)	37.1(36.5-38.9)
Bleeding (median(min-max) (cc)	100(10-1000)
VAS score (median(min-max)	3(2-5)

UP.269, Table 3. Outcome for Patient Who Went Through Laparoscopic with Re-Sterilized Instrument

Variable	N=63
Fever (n (%))	
• Yes	2(3.2)
• No	6(96.8)
Infection at the site of surgery (n (%))	
• Yes	1(2.6)
• No	62 (98.4)
Leukocyte	
• Presurgery (median(min-max)) gr/dL	98600(5040-13310)
• Postsurgery (median (min-max)) gr/dL	10023(11030-19380)

UP.269, Table 4. Surgery Profile and Laparoscopic Infection Sorted by the Length of Surgery

Type of surgery	Number of Surgeries (n(%))	Infection (n(%))	Length of Surgery (median(min-max) (minute)
Radical prostatectomy	8(12.7)	0(0)	340(240-420)
Partial nephrectomy	2(3.2)	0(0)	285(270-300)
Radical cystectomy	1(1.6)	0(0)	240(240-240)
Nephrectomy	10(5.9)	1(10)	210(150-300)
Ureteral Reimplantation	3(4.8)	0(0)	180(90-300)
Radical nephrectomy	8(12.7)	0(0)	165(90-360)
Ureterolithotomy	8(12.7)	0(0)	150(90-180)
Cyst Unroofing	7(11.1)	0(0)	90(60-120)
Tenckhoff insertion	6(9.5)	0(0)	90(60-210)
Orchidopexy	3(4.8)	0(0)	90(90-120)
Et cetera	6(9.5)	0(0)	90(50-240)

*laparoscopy diagnostic, pyeloplasty

UP.269, Table 5. Cost Profile of Resterilized Laparoscopic Instrument

Instrument	Cost of Disposable instrument (new) (Rp)	Cost of Reusable instrument	Maximal Re-use	Sterilization Method
laparoscopictrocar 5,10,11 mm	2.310.000	236.000	3x	plasma
Harmonic Hand piece	12.000.000	3.055.000	4x	plasma
Balloon and retroperitoneal pump	1.200.000	337.500	4x	plasma

Materials and Methods: A total of 48 patients with benign prostatic hyperplasia underwent Holep with en-bloc no-touch technique. Intraoperative and post-operative data were prospectively collected. For follow up, International Prostate Symptom Score(IPSS), quality of life, maximal flow rate and post-void residual urine were recorded.

Results: The mean age and preoperative estimated prostate volumes were 76.6 ± 8.5 years and 72.9 ± 35.4 mL, respectively. The mean total operating time, mean enucleation time, and mean morcellation time were 51.4 ± 20.3, 39.5 ± 10.4, and 9.67 ± 10.4 minutes, respectively. Mean hemoglobin loss was 1.01± 0.46 mg/dL. None of the patients required blood transfusion during the postoperative period. Mean catheter time was 1.3 ± 0.6 days. Serious complications were not observed. Five patients complained of transient stress incontinence which resolved within 3 months. Significant improvement occurred in IPSS, quality of life, maximal flow rate and post-void residual urine volume at 3 and 6-month follow up compared with the preoperative baseline.

Conclusion: Our en-bloc no-touch enucleation technique has encouraging results with improving enucleation time and efficiency for adenoma. This technique, once standardized, is effective and safe to improve the learning curve of Holep.

UP.271

Functional Outcome of Incontinence after Transurethral Removal of Exposed Midurethral Sling Mesh

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Introduction and Objective: Although the location of mesh to be found out is different, intravesically exposed mesh after midurethral sling procedures results from bladder erosion or missed intraoperative bladder perforation. It may result in considerable morbidity including stone formation and voiding difficulty and the mesh should be removed. We evaluated urinary functional outcomes according to the location of mesh.

Materials and Methods: A total of twenty-six (26) patients had a transurethral removal(TUR) for intravesical mesh after midurethral sling surgery (tension free vaginal tape 15; transobturator tape 11). The mesh location was classified to urethral, neck, vesical and combined type. Patients were evaluated with physical examination, ultrasonography, stress test, bladder diary.

Results: The mesh locations were as follows; urethral type in 1 patient, neck type in 18 patients, vesical type in 4 patients and combined (neck and vesical) type in 3 patients. The mesh was removed in all cases. Mean follow up was 34 months after the transurethral removal of mesh (range 12 to 60). On follow-up cystoscopic examination, a remnant mesh was observed in 4 patients and the remnant meshes were removed with repeat TUR. All patients had similar voiding patterns before TUR. But recurrence of incontinence after TUR of mesh was observed in 3 patients; 1 patient in combined type and 2 patients in vesical type. But the symptom was managed with only medications.

Conclusion: Although the recurrence mechanism of incontinence after TUR of mesh has been unknown, recurrence is very low. The severity of incontinence is mild and does not need additional operation. In our experience, all patients with recurred incontinence had bladder neck type. So, TUR of mesh exposed on bladder neck needs carefulness not to injury bladder neck function and prevent recurrence of incontinence.

UP.272

Radiation Exposure in Modified Supine Position in Comparison with Prone Percutaneous Nephrolithotomy

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Introduction and Objective: Endourologists showed more interest in supine PCNL in the last years. Galdakao-modified supine Valdivia position for percutaneous nephrolithotomy (PCNL) has become increasingly popular.

Materials and Methods: It is a prospective randomized study done over last year 2016-2017, in which patients were divided into 2 groups: group 1: patients underwent PCNL in the modified supine (Galdakao-modified supine Valdivia) position and group 2: patients underwent prone PCNL. Data on patient age, stone size, operative time, flouroscopy time, radiation exposure, complications, stone clearance, and length of stay was collected, analyzed, and compared between the 2 groups.

Results: Forty patients in each group underwent PCNLs. The groups were well matched for age, sex, and comorbidities. There was no difference in stone size (32.5 vs 31.7 mm, P=0.45). Mean operative time was shorter in supine (90.2 vs 119 min, P=0.003). There were no differences in flouroscopy time and radiation exposure between the 2 groups (9.2 vs 8.7 min, P=0.12) and (180.3 vs 173.4 mSv. P=0.14) in modified supine and prone position respectively. Stone clearance rates, length of stay (1.5 days), and complications were similar.

Conclusion: The modified supine position and prone position for PCNL has similar risk of radiation exposure to urologists.

UP.273

Comparison of Renal Functional Status before and after Shock Wave Lithotripsy (Swl) or Percutaneous Nephrolithotomy (Pnl) for Uncomplicated Solitary Renal Stones

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Introduction and Objectives: Both SWL and PNL have been shown to lead to loss of renal function. The aim of this study was to compare this loss using renal nuclear scans.

Materials and Methods: From July 2014 to June 2016, 48 consecutive patients (25 in SWL arm and 23 in PNL arm) with solitary unilateral non-staghorn stones were enrolled. Decision for SWL/PNL was patient's/surgeon's. SWL was done on Dornier Compact Delta. PNL was done with a single shortest 24 Fr tract in prone position. Each patient was subjected to Dimercaptosuccinate (DMSA) and DTPA scan with GFR before and approximately 30 days after stone clearance. Before and after comparisons were made.

Results: Mean age in SWL arm was 44.8 (35.6-48.7) yrs and PNL arm was 38.5 (30.5-45.6) yrs. 14 males in SWL and 16 males in PNL. Thirteen right sided stones in SWL and 15 right sided stones in PNL. Mean stone size in SWL was 13.7 (9-18) mm and in PNL was 24.4 (16-29) mm. In SWL group 18 had renal-pelvic, 5 inferior-caliceal, 1 mid-caliceal and 1 superior-caliceal stones. In PNL 18 had renal-pelvic and 5 inferior-caliceal stones. In SWL group average 8400 shocks were used in average 2.8 sittings. In SWL arm 20 had complete clearance, 4 had <3mm residue and one had steinstrasse. The steinstrasse patient needed multiple interventions and was excluded from final analysis. In PNL arm 20 patients had complete clearance and 3 had <3mm residue. On DMSA scanning two patients in each arm had cortical scars prior to intervention. No new scars were observed in the follow-up scans. In SWL group, the baseline GFR was 83.05±15.32ml/min/1.73m2 which got reduced to 79.15±13.83ml/min/1.73m2 (4.7% fall) in 30-day follow-up. 9 had stable, 3 had significant improvement and 11 had significant fall. In PNL group, the baseline GFR was 87.95±16.53ml/min/1.73m2 which got reduced to 84.75±18.60ml/min/1.73m2 (3.6% fall) in 30-day follow-up. 14 had stable, 3 had significant improvement and 6 had significant fall. The p value of this difference was calculated as 0.09, hence statistically insignificant. Serum creatinine values before (0.78±0.23) and after SWL (0.80±0.21) and before (0.88±0.23) and after PNL (0.91±0.22) showed no significant.

Conclusion: GFR estimation studies using DTPA scans show a reduction of 4.7% at 30 days following stone clearance by SWL and 3.6% following PNL, despite larger stone size in PNL group. This difference was statistically insignificant (p=0.09).

UP.274

Transvaginal Extraction of the Specimen after Laparoscopic Nephrectomy or Nephroureterectomy

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Introduction and Objective: We report the detailed technique and results of transvaginal extraction of the kidney following laparoscopic nephrectomy for RCC or hydronephrosis or pure laparoscopic nephroureterectomy for upper tract UC.

Materials and Methods: Since June 2014, 11 female patients (8 RCC, 2 upper tract UC and 1 hydronephrosis) with a median age of 69 years underwent transvaginal extraction of the kidney after laparoscopic surgery for kidney tumor. After completion of the laparoscopic nephrectomy or laparoscopic nephroureterectomy, the removed specimen was entrapped in the bag. The patient was placed in the supine lithotomy position. Transvaginally a transverse posterior colpotomy was created at the apex of the tented up posterior fornix. Opening peritoneum was made bluntly by fingers under laparoscopic view. The drawstring of the entrapped specimen was delivered into the vagina. After removal of the specimen, the peritoneum was sutured laparoscopically and the posterior colpotomy incision was repaired transvaginally.

Results: Vaginal extraction was successful in 10patients. Median operative time for the extraction procedure was 42 minutes. Median specimen weight was 395gm. (range 155 to 655). Bladder injury occurred in one case with a history of hysterectomy. By converting to open surgery, the kidney was removed and injured bladder was repaired.

Conclusion: Vaginal extraction is an efficacious and minimally morbid technique for removing the intact kidney after laparoscopic surgery for kidney disease. However, a careful selection is needed in patient with a history of pelvic surgery.

UP.275

Patient's Tolerance and Satisfaction during Outpatient Flexible Cystoscopy

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Introduction and Objectives: To evaluate the tolerance and satisfaction of patients undergoing flexible cystoscopy with a local anesthetic (containing 2% lidocaine hydrochloride, 0.25% chlorhexidine gluconate solution as antiseptic), and to study the correlation of perceived pain with age, anxiety before the procedure and overall satisfaction.

Materials and Methods: A total of 155 patients (102 male and 53 female) undergoing outpatient flexible cystoscopy were prospectively recruited for the purpose of the study. In 53 women (group 1) and 50 men (group 2) the examination was performed immediately after the application of the local anesthetic. In 52 men (group 3) cystoscopy was delayed for a mean time of 11.3 minutes. Before the procedure anxiety scores were recorded on a visual analogue scale ranging from 0 to 10, whilst pain and satisfaction scores following cystoscopy were also recorded. Comparisons of anxiety, pain and satisfaction scores between group 1 and 2 and between groups 2 and 3 were studied using the Student's t-test, whilst the correlations between pain and age, anxiety and satisfaction were analyzed using Pearson's correlation coefficient (r).

Results: The average pain and satisfaction scores in groups 1, 2 and 3 were 1.68 and 9.43, 1.56 and 9.56 and 2.33 and 9.33, respectively. No statistically significant difference was found in the pain, anxiety and satisfaction scores between women and men undergoing immediate cystoscopy after local anesthetic application (p=0.39, p=0.34 and p=0.22, respectively). Between men undergoing immediate and delayed cystoscopy there was a statistically significant difference in the pain score (1.6 versus 2.3, p=0,04), but not in the anxiety and satisfaction scores (p=0.09 and p=0.09, respectively). Regarding the relationship between the pain and the age, the anxiety and the satisfaction in all patients, pain was statistically significant negatively correlated with age and satisfaction (r=-0.23, p=0.004 and r=-0.70, p=0.0001, respectively) and positively correlated with anxiety before the procedure (r=0.41, p=0.0001).

Conclusion: The practice of immediate cystoscopy after local anesthetic application was found to be very well tolerated and highly satisfactory in both men and women with minimum pain score as compared to delayed cystoscopy, which seems to be more painful in male patients.

UP.276

Comparing the Effect of Tolterodine and Gabapentin with Placebo in Reducing Catheter Related Bladder Discomfort after Percutaneous Nephrolithotomy Operations

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Introduction and Objective: To compare the influence of tolterodine, gabapentin with placebo in reducing catheter related bladder discomfort (CRBD) after percutaneous nephrolithotomy (PCNL) operations. To our best knowledge this is the first trial to compare tolterodine with gabapentin in reducing CRBD.

Materials and Methods: The design of the study was a double blind (evaluator and patient) parallel group randomized clinical trial. After obtaining informed consent from PCNL candidates, patients were divided into 3 treatment groups by balanced blocked randomization. Visual analogue pain scales (VAS) were used to document bladder discomfort after the operations. Usage of pain medications was documented after the operation in treatment groups. The primary endpoint of interest was the VAS scores after the operation. Secondary endpoints included the amount of narcotic and non-narcotic pain medications.

Results: The difference in usage amounts of paracetamol, narcotic medications, and the VAS scores in gabapentin and tolterodine groups versus placebo was statistically significant (p<0.001 for all comparisons). In patients with a history of ureteral DJ catheter insertion, there was a statistically significant trend for VAS scores difference between placebo and intervention

groups. The usage amounts of paracetamol and VAS scores between tolterodine and gabapentin groups were not statistically significant.

Conclusion: The results of this study indicate the beneficial effects of tolterodine and gabapentin in alleviating CRBD in patients after PCNL operations. The use of these medications will also reduce the necessity for injecting narcotic and non-narcotic pain medication. We recommend the routine usage of these medication after operations in which catheters are kept after the operation.

UP.277

Outcomes of Robotic Assisted Partial Nephrectomy in the Adoption Phase: Experience from the Middle East

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Introduction and Objective: Partial nephrectomy has been shown to achieve equivalent oncological outcomes with additional benefits of preserving renal function when compared to radical nephrectomy. This nephron-sparing surgery has been done robotically and showed its superiority to other minimally invasive techniques. However, the literature in the Middle East lacks publications on the oncological and functional results of robotic assisted partial nephrectomy (RAPN). The objective of this study is to report the early outcomes of our RAPN experience from the Middle East.

Materials and Methods: We retrospectively collected data from 57 patients who underwent RAPN at the American University of Beirut-Medical Center (AUB-MC), from March 2014 to March 2017. Multiple peri- and post-operative parameters were collected including the R.E.N.A.L Nephrometry score and final specimens' pathologies were also analyzed.

Results: In our series, the mean patient's age was 58 years (24-84), and the average BMI was 31 (19-52). The R.E.N.A.L Nephrometry score was low (4-6), moderate (7-9) and high (10+) in 51%, 45%, and 4%, respectively. Average tumor size was 3 cm (1.4-6). The mean operative time was 241 mins (140-480). The average amount of surgical bleeding was 250 ml (50-1200) with a transfusion rate of 5%. Mean warm ischemia time was 17 mins (12-30). 80% of the pathologies were malignant and 20% were benign. Only one case, from our series, had positive surgical margins. The mean hospital stay was 3.7 days (2-6). Mean eGFR change (postop eGFR- Preop eGFR) was -8.2 ml/min.

Conclusion: In the early adoption phase, RAPN resulted in excellent oncological outcomes while preserving good renal function. Proper training, case selection and teamwork are crucial to ensure success when implementing a new technology.

UP.278

Establishing a Robotic Surgery Program in the Middle East: Early Outcomes from our Robotic Assisted Radical Prostatectomy Series

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Introduction and Objective: The robotic surgery program at the American University of Beirut-Medical Center (AUB-MC) was initiated in July 2013, and since then, it has been adopted as the primary approach for treatment of prostate cancer. The literature from the Middle East lacks publications on robotic surgery experience and specifically on the outcomes of Robotic-assisted radical prostatectomy (RARP). The objective of this study is to report the early operative and oncological outcomes of a RARP experience from the Middle East.

Materials and Methods: The robotic program was started with the recruitment of a 3-year fellowship trained robotic urologist. Initial cases were done in the presence of a senior urologist with large experience in open radical prostatectomy. The nursing team were sent for training in an expert robotic center. The retrospective data from 117 patients, who underwent RARP at our institute from July 2013 to March 2017, were collected and analyzed. Multiple peri- and post-operative parameters were highlighted including the final specimen's pathologies. The UCSF-CAPRA score for each patient was also calculated.

Results: All prostatectomy cases were completed robotically; none were converted to open. Mean age was 63.4 years (48-77) and the mean BMI was 29.1 (22.9-57.5). The mean estimated blood loss was 266 ml, with only two patients requiring blood transfusions. There were 2.6% (3/117) minor (Clavien-Dindo II) postoperative complications, and no mortalities. Mean Hospital stay was 2 days (1-5). On the final pathology, 71.4% were organ confined (pT2), and 75% had negative surgical margins. A pathological Gleason score 7+ accounted for 86.3% of our cases. Bilateral pelvic lymph node dissection was performed in 70.9% of the cases, yielding an average of 13 lymph nodes (3-37). Lymph node involvement was found in 6.0% of the cases. 18% of patients had a high-risk UCSF-CAPRA score.

Conclusion: The initial experience from our region shows that despite the low volume and taking into account the learning curve of the team, robotic assisted radical prostatectomy was associated with a short hospital stay, low complications rate and good oncological outcomes. These results are a further proof to the importance of proper training and teamwork when implementing a new technology.

UP.279

Robot-Assisted Vesico-Vaginal Fistula Repair without Tissue Interposition

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Introduction and Objective: Vesicovaginal fistulas (VVF) represents a complication that generally occurs after pelvic trauma, radiation necrosis, illegal abortion, as well as radical pelvic surgery. The incidence varies between 0.3% and 2%. It is still debatable if there is an ideal time for repair. In the last decade, the number of minimal-invasive-surgery published series grew, showing a similar trend in the surgical management of this complication as for many other urological pathologies. We present our technique of robotic assisted VVF repair in this peculiar setting repair after radical surgery for gynecologic malignancies without omental flap interposition, using the da Vinci Si robotic system.

Materials and Methods: Between 1st January to 31th December 2015, five patients with VVF diagnosed after previous open surgery for ovarian and uterine cancer were referred to our institutions. After an adequate oncologic follow-up, based on the fistula diameter and conservative management failure, robotic surgery repair was recommended. Surgery was performed by an inter-institutional team according to the collaboration agreement for teaching and robotic surgery development involving our institutions. A Da Vinci Si platform was used equipped with a 30° down optic, monopolar scissors, Maryland bipolar forceps and Prograsp forceps. A transperitoneal access and port position as for radical prostatectomy proposed by Patel was performed. A sagittal longitudinal cystotomy was carried out according to the classical bivalve technique and prolonged towards the fistula. Stenting of the ureters using double J or single J ureteral catheters was performed (at the beginning or at the end of the repair depending on distance between ureteral meatus and fistula). The fistula was excised using robotic monopolar scissors and Maryland bipolar forceps. The vaginal and vesical layers were detached to allow their separate closure. First the vaginal layer was sutured using a running PDS II 2-0 SH-1 and successively the bladder in opposing perpendicular orientation. A waterproof tightened closure is obtained using RB-1 needle 3-0 monofilament (poliglecaprone 25) running suture for the bladder.

Results: Median age was 62 years (range 55 to 71) bearing long lasting VVF were referred to our divisions. Median fistula diameter was 5 mm (range 3-8 mm). Fistula site was the trigone and identified during cystoscopy near the mid-line, left and right urether meatus, respectively. Median overall and console operatory time were 250 and 120 min., respec-

tively. Blood loss resulted insignificant (median 40 ml.) and median length of stay was 7 days without any complication. All patients had cystogram before catheter removal (median 21 days for removal). Ureteral stents, if present, were removed along with bladder catheter. At a median 12 months follow-up, no patient presented fistula relapse.

Conclusion: The quality of the dissection, and suture associated with efficient urine drainage are in our opinion the key elements of success of our technique, performed even without omentum or other tissue flap or graft interposition.

UP.280

Laparoendoscopic Single-Site Nephrectomy for Hemodialysis Patients with Dialysis-Related Renal Tumors

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Introduction and Objective: To assess the efficacy of laparoendoscopic single-site (LESS) nephrectomy in hemodialysis patients, we compared outcomes between LESS nephrectomy and conventional laparoendoscopic nephrectomy in hemodialysis patients with dialysis-related renal tumors.

Materials and Methods: A total of 16 hemodialysis patients who underwent LESS nephrectomy (LESS-N; n = 8) or conventional laparoendoscopic nephrectomy (C-N; n = 8) between November 2003 and July 2012 were retrospectively evaluated. Outcomes were compared between the two groups.

Results: Patient and tumor characteristics were similar between the LESS-N and C-N groups. The mean operative duration was greater in the LESS-N than in the C-N group (231.0 ± 26.7 min vs. 188.6 ± 36.4 min; p = 0.025). The mean estimated blood loss was lesser in the LESS-N compared with the C-N group (26.4 ± 14.4 ml vs. 65.6 ± 45.2 ml; p = 0.047). Postoperative complications were observed in three cases, comprising one case of retroperitoneal hematoma in the LESS-N group and one case each of peritoneal hematoma and retroperitoneal abscess in the C-N group. Surgical scarring was minimal in the LESS-N group.

Conclusion: Although there is a little extension of the operating time, LESS nephrectomy in hemodialysis patients is good in cosmesis and feasible procedure compared with the conventional method.

UP.281

Trocar Site Closure Devices May Influence the Post-Operative Analgesia Requirement and Patient's Length of Stay

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Introduction and Objectives: Trocar site closure devices (TSCD) are routinely utilized in standard laparoscopy and robot-assisted surgery for closure of incision sites. Their utilization may lead to a more severe post-operative pain, an increased painkillers utilization and longer length of stay as a result of poorer pain control.

Materials and Methods: We retrospectively reviewed outcomes from consecutive RALPs performed in 2016 at our Institution by a single surgeon beyond his learning curve. In our practice, we utilized the device to close the 12-mm assisting port at the end of the cases. Patients have been divided into two groups: group A included all patient on which we utilized the TSCD, group B included patients on which TSCD wasn't used. We compared results between groups including length of stay, post-operative analgesia requirement and risk of developing incisional hernia post-operatively. In all patients, we have utilized the same peri-operative and post-operative analgesia protocol.

Results: One hundred and twenty-two patients have been enrolled in the study. Thirty-seven (30.3%) patients have been included in group A and 82 (67.2%) in group B. Three patients (2.5%) have been excluded for other unrelated complications. Median length of stay in group A was 2.1 days (SD 0.5) and 1.3 days (SD 0.3) in group B (P=0.037). The mean requirement of Intravenous morphine in Recovery Room was 15 mg in group A versus 4 mg in group B (P=0.041). Statistically significant differences have been observed for utilization painkillers in the ward for Paracetamol (2.5 grams/day, SD 1 versus 1.5 grams/day SD 0.5, P=0.018), Tramadol (150 mg/day, SD 50 versus 0 mg/day, P=0.048) and Oral Morphine (10 mg/day, SD 4, versus 4 mg/day, SD 2, P=0.012). We haven't observed any case of incisional hernia in both groups.

Conclusion: Trocar site closure devices are associated with a higher utilization of analgesia post-operatively which may influence the patient's length of stay. We believe that the abdominal sidewall stitched with the TSCD may develop ischemic areas and cause more severe pain. On the other hand, we haven't observed any case of incisional hernia when the device wasn't utilized. Surgeons should consider avoiding its utilization as it can positively impact on patient's post-operative management

UP.282

Robotic Assisted Partial Cystectomy Using Tile-Pro Feature: A point of Technique

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Introduction and Objective: We describe a robotic partial cystectomy for adenocarcinoma of bladder arising from the dome, using Tile-ProTM (Intuitive surgical, Sunnyvale, CA, USA) view, while performing simultaneous cystoscopic-guided tumor margin marking to achieve precise amount of excision of bladder margin along with the tumor

Materials and Methods: Forty-year female with no co-morbid illness, presented with hematuria. Contrast enhanced Computed Tomography (CECT) of abdomen and pelvis was suggestive of solitary, asymmetrical, in-homogenously enhancing mass arising from the dome of the bladder, measuring 5.5cm x4.5cmx 1.4cm in maximum diameter. Subsequent transurethral biopsy proved the mass to be a mucinous adenocarcinoma of bladder. We proceeded with a robotic partial cystectomy. After distention with normal saline, tumor bulge was seen at dome and anterior wall of the bladder. At this stage flexible cystoscopy was done using Karl StorzTM (Tuttlingen,Germany) cysto-nephroscope scope. Tumor was visualized simultaneously under cystoscopic and robotic view with help of Tile-Pro TM (Intuitive surgicals, Sunnyvale, CA, USA) feature. At this stage, the light intensity of the robotic lens was decreased so that the tumor could be trans-illuminated by the cystoscope. Cystoscopic view could be seen at the bottom of the console screen using the Tile-proTM feature. Area to be resected was marked with monopolar scissors, using electrocautery on the peritoneal surface of bladder, 1cm away from the tumor margin. Using simultaneous visualization, bladder was incised with a margin of 1cm around the tumor and tumor was excised along with urachus, anterior peritoneum and perivesical fat. Thought the same can be replicated in laparoscopic surgery, but the surgeon requires two separate screens and has to concentrate on both of them. Moreover, easy availability of a cystoscope makes it a preferred choice over intraoperative ultrasound which she is an expensive and scarcely available.

Conclusion: Though this is a single case report, this technique has a potential to decrease positive margin rate in partial cystectomy, while maintaining a good bladder capacity. Robotic assisted Partial Cystectomy using Tile Pro application is feasible; it would help surgeon achieved better oncological results without compromising functional outcomes.

UP.283

Endourological Management of Severely Encrusted Ureteral Stents: About 23 Cases

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Introduction and Objective: Encrustion of ureteral stents is a well-known complication that might lead to renal impairment. Severe encrustation presents a challenge in management and causes considerable problems at removal. Our objective is to evaluate the effectiveness of the endourologic management of severely encrusted double-J ureteral stents.

Materials and Methods: Twenty-three patients with severely encrusted (stone > 1cm in diameter) and forgotten double-J ureteral stents were treated between June 2004 and January 2017. Encrustation and the related stone burdens were estimated by using kidney-ureter-bladder radiography or computerized tomography. All had conserved function of the affected kidney. The management method was chosen based on the stone burden, clinical and radiological findings. They were managed by endoscopic lithotripsy, percutaneous nephrolithotomy (PCNL), extracorporeal shock wave lithotripsy (ESWL) or combination of procedures.

Results: Twenty-three patients, 19 males and 4 females, were included in the study. The mean patient age was 51.3 ± 7.5 (44-83) years. Double-J stenting was indicated for urinary stone (n=21) and hydronephrosis (n=2). One of the patients with forgotten stents had solitary kidney. Long indwelling time was

due to "patient unaware stent needed to be removed" in 13 cases. The average indwelling time of the ureteral stents was 23.0 ± 13.3 (7-59) months. Treatment consisted in: ESWL (n=9), retrograde ureteroscopy with endoscopic lithotripsy (n=17), percutaneous nephrolithotomy (n=2), cystolithotripsy (n=9). No patient required open surgical removal of the stent. Ultimately, all stents were removed successfully. Stent fragmentation was reported in two cases only. All patients but four (residual stones < 5 mm) were stone free following an average of 1.6 (range 1-4) procedures. Renal function remains stable or improved in all patients postoperatively.

Conclusions: Encrusted ureteral stents are a challenging problem. Endourological management of forgotten encrusted stents is highly successful. The Therapeutic strategy should be discussed on a case-by-case basis. It consists mainly in combination of one or many sessions of endourological procedure and ESWL.

UP.284

Comparison of Umbilicus-Sparing Laparoscopic versus Open Approach for Treating Symptomatic Urachal Remnants in Adults

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Introduction and Objective: The traditional surgical approach for removing a symptomatic urachal remnant is via a lower midline laparotomy and infra-umbilical incision or a laparoscopic approach with umbilicoplasty. We reviewed our experience with umbilicus-sparing laparoscopic urachal remnant excision in a single-center study and evaluated its efficacy and outcomes versus open approach.

Materials and Methods: This study was a retrospective study. Between March 2012 and September 2016,thirty-two consecutive patients with symptomatic urachal remnants who underwent the umbilicus-sparing laparoscopic approach(n=17,USLA group) or open approach (n=15, OA group). The efficacy, recovery, and long-term outcomes were reviewed.

Results: The clinical characteristics of the patients in each group, such as age, gender, BMI index and disease type had no significant differences (p>0.05). No significant difference was found in the surgical procedure times [76 min (53~113min) versus 69 min (49~103 min), p=0.089] and intraoperative blood loss [29.4 mL (15~70 mL) versus 32.2ml (20~75ml), p=0.068] between the USLA groups and OA groups. But the mean postoperative hospital stays [3.6 days (3~8days)) versus 5.1days (4~9days), p=0.021] and the time of full recovery [12.9 days (8~18days) versus 16.8 days (11~23 days), p<0.01], the USLA group were both significantly shorter than that of the OA group. Incisional infection was postoperative observed in one of the 15 patients (6.7%) after receiving open approach. No infected recurrence and malignant transformation had occurred at a mean follow-up of 32.1months and 33.7 months in USLA groups and OA groups, respectively.

Conclusion: To minimize the morbidity of radical excision, umbilicus-sparing and postoperative recovery, laparoscopic management of benign urachal remnants in adults is a safe and efficacious alternative with superior cosmetic outcomes compared to an open approach or umbilicoplasty.

UP.285

Super-Mini Percutaneous Nephrolithotomy in the Treatment of Pediatric Nephrolithiasis: Evaluation of the Initial Results

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Introduction and Objective: To evaluate the efficacy and safety of super-mini percutaneous nephrolithotomy (SMP) in the treatment of pediatric kidney stones.

Materials and Methods: We reviewed the records of 111 children with renal stones treated with SMP technique in four different centers between September 2014 and September 2015. The indications for SMP treatment in all these kids were either previously failed shock wave lithotripsy or retrograde intrarenal surgery approaches, according to their parents' preferences. Nephrostomy tracts used in the SMP system ranged from 10F to 14F in size. Lithotripsy was performed using either a Holmium laser or pneumatic lithotripter. Perioperative and postoperative parameters along with operative data were recorded in detail and stone components were analyzed by infrared spectroscopy.

Results: This study included 71 boys and 40 girls with a mean age of 3.90 ± 3.53 years (range 0.5–15). The mean stone burden was 1.4 ± 0.6 cm (range 0.8–4.8). Mean operative time was 39.4 ± 26.2 minutes (range 7–105). The mean hemoglobin drop was 10.2 ± 7.1 g/L (range 0–25) and no transfusion was needed. Significant complications were observed in 17 (15.3%) children with 10 and 7 cases in Clavien grade I and grade II, respectively. Complete stone clearance on postoperative day 1 and on 3-month follow-up was 84.7% (94/111) and 90.1% (100/111), respectively. Ninety-five (85.6%) children did not require any type of catheters (total tubeless). The mean hospital stay was 2.7 ± 1.5 days (range 1–7).

Conclusions: Our preliminary data demonstrated that SMP was safe and effective. SMP could be a feasible treatment option for pediatric stone disease. Further randomized controlled trials are still needed to prove the efficacy of using the SMP system in children, particularly in those with larger stones.

UP.286

Laparoscopic Assisted Cutaneous Ureterostomy in Children: A Versatile Technique?

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Introduction and Objective: Laparoscopic assisted cutaneous ureterostomy (LA-CU) is a minimally-invasive approach for urinary diversion in children. We describe the technique, its feasibility and potential advantages in ten children treated for a variety of conditions.

Materials and Methods: Three trocars were used transperitoneally, one of which was placed at the later stoma site in the semi-lateral position. With a panoramic view, the ureter of interest was easily identified, mobilized and exteriorized for stoma creation. We retrospectively reviewed our experience at two centers and included both refluxing and end ureterostomies. Study period: October 2014 to September 2016. Renal function and growth-curves were noted at follow up.

Results: Ten children underwent LA-CU: 2 end and 8 refluxing CU (see table 1). Four cases had neurogenic bladder with VUR and breakthrough UTIs; five cases had lower urinary obstruction or VUR with breakthrough UTIs, renal impairment and/or delayed growth-curve; one case had a single functioning kidney with need for dialysis and VUJ-obstruction due to bladder distortion. Mean age: 21.9 ± 18.4 months (range: 24 days to 4 years and 6 months). Mean operating time: 80 ± 11.4 minutes. Mean follow-uptime: 11.7 ± 7.9 months. No major postoperative complications occurred. Renal function and growth-curves improved in all children and no urinary tract infection recurred postoperatively.

Conclusion: Primary surgical correction of obstructive or refluxive uropathy is the gold standard, however temporary urinary diversion is useful in specific scenarios. In these patients, laparoscopic assistance offers better and direct visualization, achieves accurate and rapid identification of ureter, provides adequate mobilization, tension-free exteriorization, and excision of redundant ureter in some to optimize drainage. One trocar at the eventual stoma site minimizes scarring.

UP.287

Dismembered Pyeloplasty in Neonates: Shall We Rush to Surgery?

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Introduction and Objective: Dismembered-Pyeloplasty (DP) in neonates is technically challenging and is not without complications. We evaluated outcome and complications of neonatal DP.

Materials and Methods: All neonatal (age≤2months) pyeloplasties were retrospectively reviewed from August 2014 to March 2016. All neonates were antenatally diagnosed; then followed-up postnatally by ultrasound at 1 week then 1 month after birth. DP was done through flank incision. Ureters were widely spatulated then anastomosed to renal-pelvis using 6/0 absorbable interrupted sutures. Follow-up ultrasound was done every 3-months. Renogram was added 6-months postoperatively.

Results: Fifteen neonatal pyeloplasties were reported (66% were males). All had unilateral uretero-pel-

UP.286, Table 1. Patient Characteristics

Case	Indication	Age	Sex	Technique - side	Operating time	Complications	Follow-uptime	Outcome
#1	History of antenatal stenting for important PUV with bilateral HUN, VUR and postnatal recurrent breakthrough UTIs with a non-functioning left kidney. Indication for left-sided nephrectomy and refluxing LA-CU.	10 months	M	Refluxing- left	75 min	No	22 months	bUTI: - NFP: - GCI: + IKF: +
#2	Subsequent to case 1: a single right-sided kidney, with obstructive HUN on the Withacker test.	14 months	M	End - Right	90 min	No	18 months	bUTI: - NFP: - GCI: + IKF: +
#3	History of a myelomeningocele with neuropathic bladder, bilateral VUR and recurrent breakthrough UTIs.	3 years, 8 months	M	Refluxing - left	90 min	No	15 months	bUTI: - NFP: + GCI: + IKF: +
#4	Postnatal presentation of acute postrenal kidney failure due to an enormous left-sided ureterocele in a non-functioning left-sided system with impression and torsion of the bladder, hereby obstructing the right-sided VUJ. In need for temporary peritoneal dialysis and antibiotic prophylaxis.	24 days	M	End - right	85 min	No	12 months	bUTI: - NFP: + GCI: + IKF: +
#5	Important dilated left ureter with recurrent breakthrough UTIs, impaired left-sided kidney function and delayed growth curve.	8 months	M	Refluxing - left	75 min	Peristomal excoriation	6 months	bUTI: - NFP: - GCI: + IKF: +
#6	History of a myelomeningocele with bilateral VUR (grade V) with recurrent breakthrough infections, impaired kidney function and delayed growth curve.	18 months	M	Refluxing - left	60 min	No	25 months	bUTI: - NFP: + GCI: + IKF: +
#7	Left-sided VUR (grade V) and micropenis (Warburg Micro syndrome) with recurrent breakthrough UTIs.	4 months	M	Refluxing - left	85 min	No	2 month	UTI: - NFP: + GCI: + IKF: +
#8	Lumbar myelomeningocele and important hydrocephalus. Presenting with neuropathic bladder, recurrent UTI, left VUR and loss of kidney function.	4 years, 6 months	F	Refluxing - left	/	No	12 months	UTI: - NFP: - GCI: + IKF: +
#9	Postnatal correction of a myelomeningocele with neuropathic bladder, increasing left sided HUN and VUR, recurrent breakthrough UTIs and loss of kidney function.	3 years, 6 months	F	Refluxing - left	/	No	12 months	bUTI: - NFP: + GCI: + IKF: +
#10	Congenital myelomeningocele with neuropathic bladder, recurrent breakthrough UTI and right-sided VUR. Bladder function showed overactivity and impaired compliance.	2 years	F	Refluxing - right	/	No	5 months	bUTI: - NFP: - GCI: + IKF: +

PUV: posterior urethral valves; HUN: hydroureteronephrosis; (b)UTI: (breakthrough) urinary tract infection(s); NFP: need for antibiotic prophylaxis; VUR: vesico-ureteric reflux; GCI: growth curve improvement; IKF: improvement of kidney function.

vic junction obstruction (UPJ-O) with normal renal function. Mean age was 1.7 ± 0.45 (1-2) months. Indications for pyeloplasty were split renal function (SRF) ≤ 35% (7/10 [70%] neonates) with obstructed curve (10/10 [100%] neonates) or anterior-posterior diameter of renal pelvis (APRPD) > 40 mm (9/15 [60%] neonates) at 1 month ultrasound. All children had an increasing APRPD at 1-month ultrasound when compared to their initial ultrasound. No vesico-ureteric reflux or ureteric dilatation were detected in preoperative VCUG (12/12 [100%] neonates) or US (15/15 [100%] neonates); respectively. Mean operative time was 95 ± 12.2 (75-120) min. 6 (40%), 8 (53.3%) and 1 (6.7%) pyeloplasties were stentless, external-transanastomotic nephrouretero-stent (ETNUS) or double-J stent (DJ); respectively. APRPD and SRF improved from 43.8 ± 11.45 (30-76) mm and 30.4 ± 12.13 (10-48) % preoperatively to 18.6 ± 10.04 (5-45) mm and 38.13 ± 9.4 (15-48) % 6-months postoperatively, respectively. Mean hospital-stay was 3.33 ± 1.63 (2-7) days. No children required blood transfusion. Complications were detected in 2 (13.4%) patients (leakage associated with fever in 1 patient and leakage associated with UTI in the other). Leakage was managed by DJ (1 patient was previously stentless and the other with blocked ETNUS). One of these 2 patients required redo-pyeloplasty after DJ removal due to recurrent obstruction while all ultrasonic and renographic parameters improved in remaining children. Thus, overall success rate was 93.4%.

Conclusion: Neonatal pyeloplasty can be safely performed, when strongly indicated, with experienced hands. It has the advantage of early preservation of renal functions with acceptable complications.

UP.288

Should Children Be Woken Up Forcibly When the Alarm Goes Off in Enuresis Alarm Therapy?

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Introduction and Objective: In enuresis alarm therapy, it is assumed that the child must get up when the alarm goes off. Actually, some children cannot wake up at all even if family wakes him/her up. However, even in some of these cases, enuresis alarm therapy can help to improve the situation over time.

Materials and Methods: Among children with enuresis who visited Okayama Citizens' Hospital, Okayama University Hospital and Kikuna Memorial Hospital, 70 children receiving cordless alarm therapy between September 2012 and December 2015 were included in this study. The sample comprised 53 boys and 17 girls (median age 11.3 years; range 6.3-14.9 years). They were treated with cordless alarm for three months. We requested families to observe a natural reaction to the alarm instead of waking the children up forcibly. We investigated the effectiveness according to the reaction. The participants were classified by their behavior into three groups as below. With alarm children who: A: could awaken themselves. B: could not wake up but showed some reactions. C: did not show any reaction.

Results: The average frequency of bed-wetting before the therapy was 5.5 times a week. In a previous similar study the dropout rate was 21.4%. Response was defined as a reduction in the frequency of enuresis by 50% or more according to international children's continence society guidelines. The effective rates of the treatment were 69% in group A, 57% in group B and 67% in group C. There were no significant differences among three groups.

Conclusion: The treatment results did not have significant differences between the children who could awaken themselves and those who did not show any reaction. This study suggested that a forced awakening was not necessary in the alarm therapy and resulted in futile abandonment of the alarm therapy.

UP.289

Relationship between Undescended Testis Position and Prevalence of Testicular Appendices, Epididymal Anomalies and Patency of Processus Vaginalis

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Introduction and Objectives: Assess the incidence of testicular appendices (Tas), epididymal anomalies (EAs) and processus vaginalis (PV) patency in patients with undescended testis (UT) according to testicular position and compare with human fetuses with testis situated in scrotum.

Materials and Methods: We studied 85 patients (108 testes) with cryptorchidism and compared with 15 fetuses (30 testes) with scrotal testis. Testicular position was classified as: a) Abdominal (proximal to the internal ring); b) Inguinal (between the internal and external rings); and c) Supra-scrotal (below the external ring). We analyzed the relationships among the testis and epididymis (epididymal atresia and disjunction were considered EAs), patency of PV and the presence of TAs. We used qui-square test for statistical analysis ($p<0.05$).

Results: The mean age of fetuses were 31.66 weeks post conception and the patients mean age was 5.16 years. In fetus, we observed patency of the PV in 7 cases (23.34%), presence of TAs in 27 (90%) and EAs in only 1 testis (3.44%). In 108 UT, 72 (66.66%) had PV patent, 67 (62.03%) had TAs and 39 (36.12%) had EAs. Of the 108 UT, 14 were abdominal (12.96%; 14 had PV patency, 9 TAs and 7 EAs); 81 inguinal (75%; 52 had PV patency, 45 TAs and 31 EAs) and 13 were supra-scrotal (12.03%; 6 had PV patency, 13 TAs and 1 EAs). Patency of PV had a higher prevalence in UT than fetuses ($p<0.0001$) and in abdominal UT when compared to inguinal ($p=0.0072$) and supra-scrotal UT ($p=0.0014$). The patency of PV was more frequent associated to EAs ($p=0.00364$). The EAs had a higher prevalence in UT when compared with fetuses ($p=0.0005$). We do not observe differences in EAs between abdominal and inguinal UT ($p=0.4082$) and between the inguinal and supra-scrotal UT ($p=0.0308$), but we observed a higher prevalence of anomalies in abdominal (0.0002) and inguinal UT ($p=0.0003$) when compared with fetal testis and abdominal and supra-scrotal UT ($p=0.0161$). We do not observe differences in the incidence of TAs between UT and fetuses ($p=0.1367$).

Conclusions: Undescended testis has a higher risk of anatomical para-testicular anomalies and the testes situated in abdomen and inguinal canal has a higher risk to present patency of PV and EAs.

UP.290

Role of Minimally Invasive PCNL Techniques: Micro and Ultra-Mini PCNL (<15Fr) in the Paediatric Population - A Systematic Review

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Introduction and Objective: Management of paediatric stone disease is challenging, with standard PCNL having a good stone free rate (SFR) but with associated high complication rates. Miniaturisation of this technique has led to the rise of minimally invasive PCNL techniques such as micro (<10Fr) and ultra-mini (<15Fr) PCNL procedures. Our objective was to perform a systematic review of the literature in order to evaluate the success and complication rates of minimally invasive PCNL techniques in the paediatric age group (<18 years).

Materials and Methods: A Cochrane style search was performed and the following bibliographic databases were accessed: Pubmed, Science direct, Scopus, Google Scholar and Web of Science. This was carried out in accordance with the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) guidelines.

Results: A total of 14 studies (456 patients) including 8 micro-PCNL (m-PCNL, n=233) and 6 ultra-mini PCNL (UMP, n=223) were included. Mean stone size ranged from 12-16.5 mm (m-PCNL) and 12-41mm (UMP), the overall SFR ranged from 80% - 100% (m-PCNL) and 85% - 100% (UMP). The overall complication rates for all studies were 11.2%, which was slightly higher for UMP (13.9%). Post-operative renal colic or fragment obstruction was only seen in m-PCNL, but there was a statistically significant rate of extravasation or renal pelvicalyceal perforation and haematuria for UMP compared to m-PCNL ($p<0.05$).

Conclusion: Miniaturised PCNL techniques can deliver high stone free rates with a small risk of Clavien I/II complications. The size of tract seems to influence the nature of complications, with higher haematuria and renal extravasation with increasing tract size.

UP.291

Abnormal Dartos Fascia in Buried Penis: Evidence from Histopathology

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Introduction and Objective: Pathophysiological mechanisms leading to buried penis remain unclear. Resection of dartos tissue usually corrects the penis in those with buried penis, suggesting a common pathophysiology related to dartos tissue.

Materials and Methods: We conducted this study at Cipto Mangunkusumo Hospital Jakarta from May 2013 to November 2016. We collected dartos fascia specimens from 2 groups, namely buried penis and normal penis served as control. We compared the fibers between these groups by Masson Trichrome histochemical staining, Gomori's silver impregnation staining, Weigert-resorcin fuchsin staining and CD31 immunohistoschemical staining for evaluation of collagen fibers, reticulin fibers, elastin fibers, and endothelial cells of blood vessels, respectively. The collagen fibers, reticular fibers, elastic fibers and vascular vessels were counted with ImageJ, and then were analyzed using independent-T test. The assessment conducted by two pathologic researchers was blinded, without knowing the clinical diagnosis of patients.

Results: We involved a total of 40 patients with 20 patients for each group. Median age for all the patients was 7 (range 1-16) years old. In term of collagen fibers, most cases of buried penis showed thicker but lesser number of collagen fibers than normal penis. Besides that, there was significant reduction of elastin fibers of dartos fascia in buried penis cases. On the other hand, ratio of reticulin fibers, which represent collagen type III, to total collagen in buried penis was increased in comparison to normal penis.

Conclusion: There is a difference between connective tissue of dartos fascia in buried penis compared to normal penis, particularly in total collagen fibers, elastin fibers, and reticulin to total collagen ratio.

UP.291, Table 1. Histopathologic Comparison between Normal and Buried Penis

	Normal (n=20)	Buried (n=20)	p-value*
Collagen fibers (Mean ± SD)	435.5 ± 158.7	246.7 ± 77.8	< 0.001
Elastin fibers (Mean ± SD)	310.5 ± 75.9	193.3 ± 62.2	< 0.001
Reticulin fibers (Mean ± SD)	214.7 ± 78.2	177.2 ± 35.5	0.058
Blood vessels (Mean ± SD)	8.2 ± 2.8	7.6 ± 2.6	0.525

*Independent-T test

Inelastic dartos fascia tissue in patients diagnosed with buried penis is an abnormal tissue. Therefore, it is suggested to excise this tissue during reconstructive surgery. Further research is needed to unveil the pathophysiology of the condition.

UP.292

The Ethnic and Geographical Pattern of Disease of Hypospadias in a Developing Country

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Introduction and Objective: To describe the ethnic and geographical pattern of disease of Hypospadias in Trinidad and Tobago.

Materials and Methods: Data was collected retrospectively for all patients presenting with hypospadias during the period 1995 to 2013.

Results: During this period, a total of 180 patients presented with hypospadias giving an incidence of 2.7 in 1000 live births. Most patients (72%) had a distally placed meatus, only requiring a one-stage repair. Greater severity of disease was defined as complex abnormalities requiring two-stage repairs. This was seen in patients who had a proximally placed meatus or a distal meatus with a poor urethral plate. There was equal racial distribution seen in incidence, however Indotrinidadian boys were noted to have more complex abnormalities. Of all complex cases managed, 42% were Indotrinidadian therefore requiring a two-stage repair. Although most patients in our study (52%) originated from North Trinidad, a significant 39% of patients with greater severity of disease were found in the South-west region of the island.

Conclusion: Hypospadias remains the most common type of congenital penile anomaly worldwide. In Trinidad and Tobago, there was no strong association with race however Indotrinidadian males exhibited a higher rate of complex disease. This may imply a genetic association which has been well documented in Indian literature suggesting V89L polymorphism of the SRD5A2 gene. There was a significant association with geographic location which suggests an environmental etiology, possibly due to petrochemical and pesticide use in that region. Further studies to determine significant etiological factors are therefore warranted.

UP.293

A Developing Country's Experience with Posterior Urethral Valves

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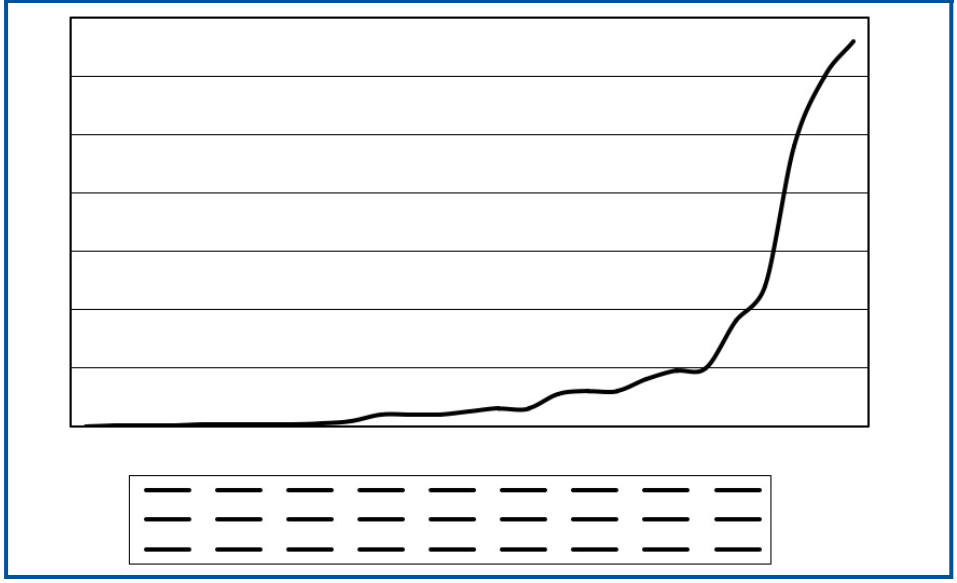
Introduction and Objective: To establish the incidence of posterior urethral valves in Trinidad and Tobago and to describe the presentation, management and outcomes of treatment in these patients.

Materials and Methods: Data was collected retrospectively by examining the files of all patients with posterior urethral valves (PUV) presenting to the Eric Williams Medical Sciences Complex (EWMSC) from 2005 to 2015.

Results: Twenty-seven patients were diagnosed with PUV during the 10 year period, representing an incidence of 1 in 4500 male live births. Seventy percent of patients presented within the first year of life with a median age of 4.5 months, mainly with urinary tract infections and obstructive symptoms. Serum creatinine on presentation was mostly normal in with a median value of 0.6 mg/dl. All patients were diagnosed from postnatal KUB and MCUG. Of all patients, 12 underwent primary resection of valves. Fourteen patients required primary vesicostomies and approximately half of these went on to have resection. The remaining patients are still awaiting definitive management. The majority exhibited reduction in creatinine to normal values post resection. The average nadir creatinine was found to be 0.47 mg/dl. 47% of patients had no complications and the remainder experienced mostly recurrent UTI and enuresis. Concerning the long term clinical outcome, 4 patients required further surgical intervention. Of these, 1 patient developed a urethral stricture which was dilated. 3 patients had residual valves, 2 of whom underwent further resection and 1 required a nephrectomy for a nonfunctional hydronephrotic right kidney and recurrent urinary tract infections.

Conclusion: A descriptive study of posterior urethral valves in Trinidad and Tobago was embarked upon with the objective of determining the incidence and pattern of disease and how these compare to international data. Our population shows a similar pattern of incidence and presentation even with limitations encountered with antenatal diagnoses. Our complication rates and outcomes are acceptable compared to worldwide data, with recurrent UTI and enuresis being the most common causes of long term morbidity.

UP.293, Figure 1. Graph Showing Distribution of Age at Presentation /Months



UP.294

Adolescent Varicocele: Are Somatometric Parameters a Cause?

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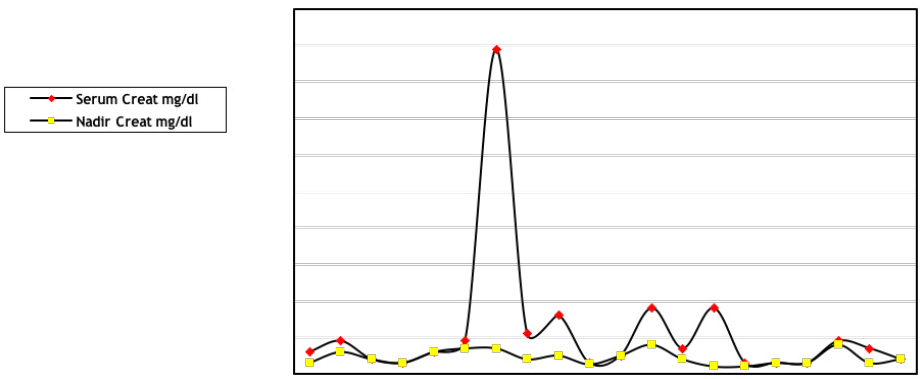
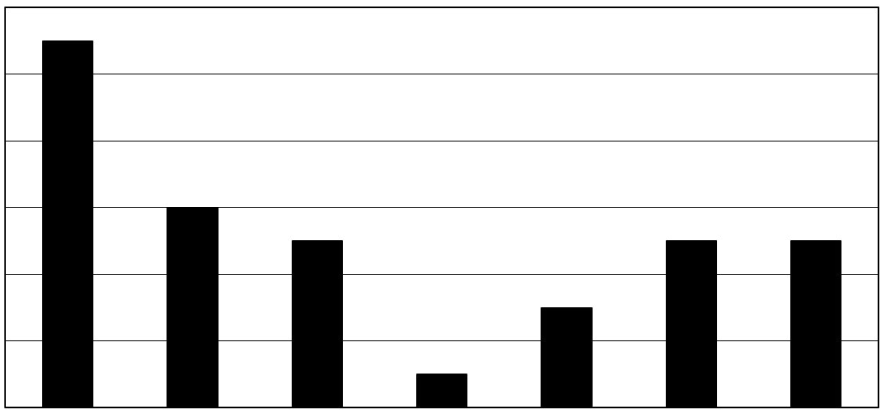
Introduction and Objective: It has been reported that varicocele is found less frequently in obese men. Accordingly, we evaluated varicocele patients and statistically analyzed the correlation between varicocele and somatometric parameters.

Materials and Methods: A total of 211 patients underwent surgery for varicoceles. All patients underwent history taking, physical examination, and scrotal ultrasound to determine the presence and severity of varicocele. An age-matched control group consisted of 102 patients who were found not to have varicocele according to physical examinations and scrotal ultrasound. The age, weight, height, and body mass index (BMI) of the two groups were compared. The statisti-

UP.293, Figure 2. Graph Showing Distrubution of Serum Creatinine and Nadir Creatinine



UP.293, Figure 3. Graph Showing Distribution of Long Term Outcomes



cal analyses were performed by use of PASW Statistics ver. 18.0. A p-value of less than 0.05 was used for statistical significance.

Results: In the varicocele group, the mean age, height, weight, and BMI were 29.42±14.01 years, 168.53±9.97 cm, 62.14±13.17 kg, and 21.66±3.21 kg/m2, respectively. The distribution of varicocele grade was as follows: 103 (48.8%) grade III, 72 (34.1%) grade II, and 36 (17.1%) grade I. In the control group, the mean age, height, weight, and BMI were 30.83±17.31 years, 161.93±19.83 cm, 64.69±17.86 kg, and 24.04±3.64 kg/m2, respectively. Analyzing these data specifically in adolescents, they showed significant differences in age, height, and BMI (p=0.000, p=0.000, and p=0.004, respectively) between two groups. There were no significant differences in somatometric parameters between patients with different grades of varicocele.

Conclusions: Our results showed that adolescents with varicoceles were significantly taller and had a lower BMI than adolescents without varicoceles. Carefully designed future studies may be needed.

UP.294, Table 1. Comparison of Somatometric Parameters According to Varicocele by Two-Sample T-Test in Adolescents

	Group		
Variable	**Nonvaricocele (n=28)**	**Varicocele (n=63)**	**p-value**
Age (y)	12.32±4.90	16.90±2.48	0.000*
Height (cm)	138.56±26.37	160.95±12.33	0.000*
Weight (kg)	44.56±19.37	51.21±12.64	0.122
BMI (kg/m2)	22.12±5.25	19.51±2.85	0.004*

BMI, body mass index
*Statistically significant, p < 0.05

UP.295

Distal Hypospadias Repair by the Modified Glans Approximation Procedure: Initial Experience of Snodgrass Modification

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Introduction and Objective: GAP for distal hypospadias repair has been an appealing procedure because it is technically quick and easy to perform and has a potential for a very normal glans meatal appearance. Application of this technique may be expanded to include distal hypospadias whose granular groove is not so deep when it is combined with incising the urethral plate.

Materials and Methods: Between 2005 and 2014 we performed the GAP for distal hypospadias in 65 boys. Overall 33 patients underwent modified GAP with urethral plate incision. Pre-operatively the meatus was located on the glans in 56 boys (86.1%), 9 (13.9%) at the corona or an immediate subcoronal position. 20 patients (31%) were mega-meatus intact prepuce. Before incising the plate, we tested the diameter of urethral plate by approximating the edge of opposite glans over the 10 Fr. urethral catheter. When it was necessary to deepen the ventral glanular groove further, it was incised until the urethral plate was divided enough to make the urethra with an adequate diameter after tubularization. Thereafter, a horseshoe shaped de-epithelialization was made in the glans around the meatus as described by Zaontz. The neourethra was tubularized using a running subcuticular suture and absorbable interrupted suture was used for closure of intermediate layers of subcutaneous tissue. The glans was then closed over the repair for deep glans-to-glans approximation.

Results: Mean age of patients was 12.06 (± 6.30) years old. Follow-up physical examination was performed 6 to 86 months (mean 8.2 months) postoperatively. There were 3 cases of mild meatal or urethral stenosis but none required reoperation. A urethra-cutaneous fistula requiring reoperation developed in 2 (6.1%) and 5 (15.6%) patients in GAP and modified GAP respectively. Comparing the GAP to modified GAP regarding fistula rate, there was no statistical difference (p=0.214). Patients were satisfied with the voiding stream and glans appearance in 63 patients (97%).

Conclusion: GAP for distal hypospadias repair is technically quick and easy to perform. We frequently combined this procedure with urethral plate incision in a patient with a deep glanular groove which made a vertically oriented, slit-like meatus in the majority of cases.

UP.296

Complications of Childhood Circumcision in West Africa: A Review and Next Steps

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Introduction and Objective: Childhood circumcision has been practiced in West Africa for many centuries. Culture, religion, rituals and parental values surround the "art, science and technology" of circumcision in this region with the attendant risks of pain, adverse events and costs, some people have questioned the validity and ethics of neonatal and childhood circumcision. Quite recently, randomized trials have suggested benefits of circumcision in preventing HIV/AIDS. This has fueled the strength of the protagonists

for male circumcision who advance other benefits, such as better penile hygiene, absence of phimosis, para-phimosis, reduced risk of recurrent UTIs, sexually transmitted and penile cancer in men and cervical cancer in their partners. Despite the push to get more men circumcised to prevent HIV/AIDS, there has been limited efforts to understand the potential complications of this operation. Though numerous reports on childhood circumcision in West Africa exist in the English literature, a systematic review of this subject specific to this region is rare or does not exist the objective of this systematic review is to learn about the prevalence of complications of childhood circumcision, consider ways to improve patient safety, through better training, regulation and public health education.

Materials and Methods: A systematic literature review was done through the major data bases following a search strategy for articles on complications of childhood circumcision in West Africa between 01 August 2006 and 31 October 2016. Prospective, case-control, cohort, retrospective and randomized controlled studies were included and case reports excluded.

Results: Applying the process PRISMA, ten reports of childhood circumcision complications were included. These articles were not strictly comparable. There was a wide range of complications from 1.1% to 77.4% and dependent on pattern of practice and referrals. Serious complications were low (<2%). Urethro-cutaneous fistula caused considerable morbidity. These occurred with practitioners who lacked the skill and knowledge of circumcision.

Conclusion: This study suggests that male neonatal/childhood circumcision is safe but has some preventable risks and complications. Improved techniques, adequate training, supervision and inter-professional practice will help maintain and improve the safety of this age-old surgery.

UP.297

Varicocoeles and Heredity in First Degree Relatives

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Introduction and Objective: The heredity of varicoceles and the potential inheritance to first-degree relatives has rarely been investigated. In this study, we examined the first-degree relatives of asymptomatic adolescent boys who were diagnosed with a varicocele to reveal the familial risk for varicocele.

Materials and Methods: From October 2014 until March 2017, we examined 609 adolescents aged 11 to 16 years. Ultrasonography was used to diagnose varicoceles, which were defined as venous vessels with a diameter ≥2mm and retrograde flow during valsalva manoeuvre. The participant and parent were asked to fill in a questionnaire in which we asked whether the participants father and brother(s) have (had) a varicocoele. Chi-square analysis was used for statistical analysis.

Results: In 38 of the 609 (6.24%) included boys, the father was found to have or have had a varicocele. The other 571 (93.76%) boys formed the control group. In 17 of the 38 (44.74%) fathers with a varicocoele, the son was diagnosed with a varicocele. In the control group this was the case in 21 (3.68%) sons. Chi-square analysis showed a significant difference between both groups (p = 0.001). No significant difference was found when stratified for varicocele grade (p = 0.246). Of the 609 included boys, 9 (1.48%) had a brother who had or have had a varicocoele, the other 600 (98.52%) boys formed the control group. Of the 9 brothers with a varicocoele, 2 (22.22%) had a brother in which we diagnosed a varicocele. In the control group this was the case in 133 (22.17%) brothers. Chi-square analysis showed no significant difference between both groups (p = 0.997). No significant difference was found after stratification for varicocele grade (p = 0.246).

Conclusion: We report a varicocele prevalence of 22.17% in Flemish asymptomatic adolescent boys. In conclusion, a significant increase in the risk for a varicocele exists when the patients father has or has had a varicocoele. When a father is known with a varicocele, his son should be screened during adolescence. Furthermore, this risk doesn't seem to be influenced by the grade of varicocoele.

UP.298

The Impact of Testicular Microlithiasis on Testicular Volume: A Cross-Sectional Observational Study

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Introduction and Objective: Testicular microlithiasis (TM) are small non-shadowing hyperechoic foci within the testicular parenchym with a diameter ranging from 1 to 3 mm. Its prevalence in asymptomatic men is reported to be 4,2% to 5,6% (1,2). As far as we know, there's no knowledge about the relation between TM and testicular volume.

Materials and Methods: From April 2015 until December 2016, we examined 474 adolescents aged 11 to 16 years. Adolescents with a current or past pathology influencing testicular growth were excluded. Ultrasonography was used to determine testicular dimensions. Testicular volumes were calculated using Lambert's formula: (Volume=LxWxHx0,71).

Independent t-test was used for statistical analysis.

Results: Of the 379 included adolescents, 34 (8,97%) were found to have TM, the other 345 (91,03%) formed the control group. Mean left, right and total testicular volume in adolescents with TM were respectively 7.67 mL (SD 5.63), 7.97 mL (SD 5.90) and 15,61 mL (SD 11.42). Mean left, right and total testicular volume in the control group were respectively 8.18 mL (SD 6.48), 9.88 mL (SD 6.75) and 18.06 mL (SD 12.38). Independent t-test showed no significant difference in left (p = 0.28), right (p = 0.39) and total (p = 0.71) testicular volume between both groups.

Conclusion: We report a prevalence of TM in Flemish asymptomatic adolescent boys of 8,97%. Furthermore, these results show that the mean testicular volumes in boys with TM don't seem to differ from the mean testicular volumes in the healthy population.

UP.299

Alterations of Autonomic Nervous System Activity during Bladder Filling in Children with Spina Bifida

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Introduction and Objective: The functional activity of autonomic nervous system in spina bifida has not been well elucidated. Our objective was to investigate autonomic nervous system activity using heart rate variability (HRV) in children with spina bifida during bladder filling.

Materials and Methods: HRV was assessed during video-urodynamic study in a fixed protocol (P0: 2 minutes before start filling; P1: start of filling-normal desire to void; P2: P1-end of filling or start of voiding). A total of 25 HRV and UDS results between May 2015 and July 2016 were reviewed retrospectively. During the period, children with vesicoureteral reflux who underwent video-urodynamic study was established as a control group. Children more 4 years old were included for the study. Children who had voiding symptoms or who were on medication affecting autonomic nervous activity such as anticholinergics were excluded. Sixteen patients were included finally (9 control, 7 spina bifida).

Results: Comparison of outcomes at baseline demonstrated significantly lower RMSSD and pNN50 in children with spina bifida compared with control (23.46±14.99 vs 50.96±23.53, p=0.018; 4.61±6.58 vs 33.97±22.02, p=0.004, respectively). In frequency domain, high frequency (HF) HRV was significantly lower (117.61±117.83 vs 724.43±402.64, p=0.002) while low frequency (LF) HRV was not different (p=0.502). During filling phase, the ratio of LF/HF (P0 5.43±5.95 vs P1 3.85±4.93, p=0.025) was reduced and HF were significantly increased in children with spina bifida.

Conclusions: Alterations in cardiac autonomic nervous system activity were detected in children with spina bifida at baseline and during bladder filling. Domains representing parasympathetic activity are relatively decreased in children with spina bifida and sympathetic activity is dominant at baseline. During bladder filling phase, a decrease in sympathetic neural activity in children with spina bifida may be related to the pathophysiology of neurogenic bladder in spina bifida.

UP.300

Primary Monosymptomatic Nocturnal Enuresis: Monotherapy vs Combination Therapy

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Introduction and Objective: To evaluate the clinical results of monotherapy with combination therapy in treatment of primary monosymptomatic nocturnal enuresis (PMNE) in children.

Materials and Methods: Between December 2008 and May 2013, we reviewed the records of 176 children with PMNE. The monotherapy group received 120 micrograms of desmopressin melt whereas the combination therapy group received 120 micrograms of desmopressin melt plus 1-2 mg oral tablet of tolterodine. The degree of response was evaluated at 1-3 months during the treatment and 6 months after complete cessation of treatment protocol.

Results: Between 176 children, 84 and 92 patients received monotherapy and combination therapy, respectively. There were no statistical differences in gender, age, or baseline monthly frequency of PMNE between the two groups. At baseline, patients had an overall mean of 23.6 ± 5.6 wet nights per month, which decreased to 10.8 ± 5.6 and 7.3 ± 5.3 in monotherapy group and 8.9 ± 9.5 and 3.3 ± 4.9 in combination therapy group at 1 and 3 months after treatment. The rates of Complete plus Partial Response to treatment at 1 and 3 months for monotherapy and combination therapy group were 63.1% and 73.9% vs 72.5% and 93.47% (P value .12 vs .006). The relapse of PMNE 6 months after complete cessation of treatment was 16.39% and 9.09% for monotherapy vs combination therapy group.

Conclusion: This study supports the efficacy of combination therapy with desmopressin melt plus oral tolterodine over monotherapy with desmopressin melt in the first-line treatment of PMNE in children.

UP.301

Evaluation Therapeutic Results of Human Chorionic Gonadotropin in Patients with Unilateral Cryptorchidism (Undescended Testis) Referred to Labbafinejad, Milad and Torfeh Hospitals between 2014-2016

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Introduction and Objective: Cryptorchidism or undescendent testies (UDT) is a development defect in which one or both testies did not reach to scrotum. Human chorionic gonadotropin (HCG) induce testies descent that may be through increasing testicle's weight and vessels and also inducing testosterone. The aim of this study is to investigate therapeutic effects of HCG in treatment of unilateral UDT in children.

Materials and Methods: In a perspective qualitative study, 211 male children with unilateral Cryptorchidism and over the six months' age that did not undergo surgical procedure, treated by HCG infusion. They visited 4 weeks, 3 months and 12 months following treatment and were checked in testis location, recurrence and complications. Data were analyzed by Khi –deux test.

Results: Suggest that 4 weeks following the last injection of HCG, in 160 (75.12%) patient's relocation of testis to the inguinal canal and descent to the scrotum were observed. Among 46 patients with intrabdominal testis, in 32 patients (69.50%) testis was relocated to the inguinal canal. Also, in 86 patients intrainguinal testis, in 60 patients (69.7%) testis was relocated to the scrotum. This was 78% (39 of 50) in the patients with sup.ing. pouch testis and 100% patients with retractile testis had descent to the scrotum.

Conclusion: More than 50% of cases in all groups replied to the treatment with HCG that resulted in the descent from primary location. This seems slightly higher in comparison to the previous studies. With regard to primary anatomical testis location, there was almost 20% - 25% of recurrence so at least one year following is necessary.

UP.302

Is Top-Down Approach Accurate enough to Identify Vesicoureteral Reflux?

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Introduction and Objective: This study was conducted to evaluate the diagnostic accuracy of dimercaptosuccinic acid (DMSA) scans performed during febrile urinary tract infection (UTI) for prediction in identifying the severity of vesicoureteral reflux (VUR).

Materials and Methods: Between January 2005 and December 2016, 208 of 1500 children (416 renal units) who were admitted with the diagnosis of a first febrile UTI with positive urine culture at our hospital retrospectively were evaluated. For them renal DMSA scan was performed during the first two weeks of UTI and VCUG at the first month after treating UTI. Renal parenchymal status based on DMSA scan was classified as normal, pyelonephritic change, scars and atrophy. The sensitivity, specificity, and positive and negative predictive value of DMSA scanning for predicting VUR were analyzed.

Results: Male-to-female ratio was 59/149. The mean age was 3.34±2.54 years. Patients with pyelonephritic change in DMSA had significantly higher rate of grade III VUR (P<0.001) and patients with scar in DMSA had significantly higher rate of grade IV-V VUR (P=0.005). Spearman analysis showed a significant association between grade of VUR and severity of renal damage in DMSA (P<0.001). The sensitivity, specificity, positive and negative predictive value (NPV) of DMSA scan in predicting VUR was as followed: 52%, 75%, 78% and 48%.

Conclusion: This study showed that first step use of DMSA scan in assessment of children with first episode of febrile UTI lead in missing of many patients with high grade VUR and DMSA could not predict results of VCUG with enough accuracy.

UP.303

Are Urodynamic Studies Necessary before Intravesical Botox Injections in Adolescent Patients with Idiopathic Overactive Bladder Symptoms?

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Introduction and Objective: Intravesical botox therapy was originally reserved for girls with medical refractory overactive bladder symptoms (OAB) with proven detrusor over-activity (DO) on urodynamic studies (UDS). However, girls without DO can still have exhibit significant OAB symptoms resulting in low self-esteem, social isolation and undue stress and anxiety when compared to their peers. Our aim is to see if there is a significant difference between quality of life outcome scores in patients with NNDO diagnosed on urodynamic studies (UDS) versus clinically demonstrated idiopathic overactive bladder symptoms (IOAB) receiving submucosal intravesical botulinum toxin A injections.

Materials and Methods: A retrospective review of prospectively collected data of patients aged 10-18 undergoing their first intravesical botox treatment (200 IU Allergan) between April 2010 and April 2014. Patients were subcategorized into 2 groups: NNDO diagnosed on UDS (group 1) and those with normal or no urodynamic studies (group 2). A PIN-Q paediatric quality of life questionnaire was completed on the day of surgery and 3 months post operatively. The difference in scores was statistically analyzed using the unpaired student-t test on graphpad (p= <0.05 was considered significant).

Results: Thirty-two females received botox. Seventeen in group 1, mean age 14.5 years (10.9-17.5). There was no significant difference between group demographics or previous medical therapies tried. Pre PIN-Q: mean 40.5 (26-74). Post PIN-Q: mean 25.7 (8-58). Reduction in PIN-Q score: mean 6.9 (31-3). Fifteen in group 2, including 6 with normal and 9 without UDS pre-botox. Mean age 15.3 years (12.0-17.0). Pre PIN-Q: mean 47.4 (29-77). Post PIN-Q: mean 16.0 (3-31). All girls had a reduction in their PIN-Q score post botox; mean 16.1 (49-10). There was no statistical difference between the pre (p=0.37), post (p=0.30) and decrease (p=0.14) in PIN-Q scores.

Conclusion: UDS should not be performed routinely on all patients with medical refractory IOAB prior to botox therapy. It should be reserved for patients with intractable symptoms post treatment.

UP.304

An Epidemiological Study of Testicular Loss in Post-Pubertal Korean Male

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Introduction and Objective: The loss of one testicle may affect not only fertility but also psychological matter, especially in young adults. However there

UP.304, Table 1. Cause of Testicular Loss

Etiology	Number of examinees (%)
Testicular torsion	24 (32.0)
Cryptorchidism	18 (24.0)
Vanishing testis	10 (13.3)
Testicular tumor	7 (9.3)
Infection	5 (6.7)
Testicular trauma	4 (5.3)
Hypo-/hypergonadotropic hypogonadism	3 (4.0)
Unknown	4 (5.3)

has been no study on the etiology of testicular loss in those ages. The current study is aimed to estimate the prevalence of testicular loss and identify the disease that contributed to the testicular loss in post pubertal young male.

Materials and Methods: In Korea, all 19-year-old men are candidates for military service so they must visit the Military Manpower Administration to check their health status. Thus, they are considered a cohort of young Korean male adults born in the same year. The retrospective cross-sectional study was conducted with total 74,033 examinees to evaluate the prevalence of testicular loss among 19 years old male who visit Seoul and Incheon Military Manpower Administration for draft physical examination from April 2014 to March 2016. The examinees of testicular absent or severe atrophy were identified and investigated through medical history taking, physical examination, scrotal ultrasound, abdominal CT and medical records review. In this study, severe testicular atrophy was defined as volume which less than 1/3 of unaffected testis measured by sonography.

Result: The prevalence of testicular loss was 0.10% (75 of the 74,033 examinees). Of the 75 examinees, 71 examinees were unilateral testicular loss and remaining 4 were bilateral testicular loss. The most common cause was testicular torsion (24 examinees, 32.0%) and the other etiologies of testicular loss are summarized in table 1. Sixteen of the 24 examinee who underwent the scrotal exploration for testicular torsion were significantly delayed in hospital visit more than 1 day. Also, only 3 of the 18 examinee presenting testicular loss from cryptorchidism underwent surgical treatment within 18 months.

Conclusion: In our knowledge, this is the first epidemiology study of testicular loss in similar ages especially in young adults. Most of testicular loss was associated with late access to urological clinic that leads to delay in surgery. Therefore, clinicians and media should provide proper education on promoting public awareness not to delay diagnosis and visiting hospital especially in younger ages.

UP.305

The Comparison of High Ligation Only versus High Ligation with Hydrocelectomy in the Pediatric Hydrocele: Is Hydrocelectomy Necessary in Pediatric Hydrocele?

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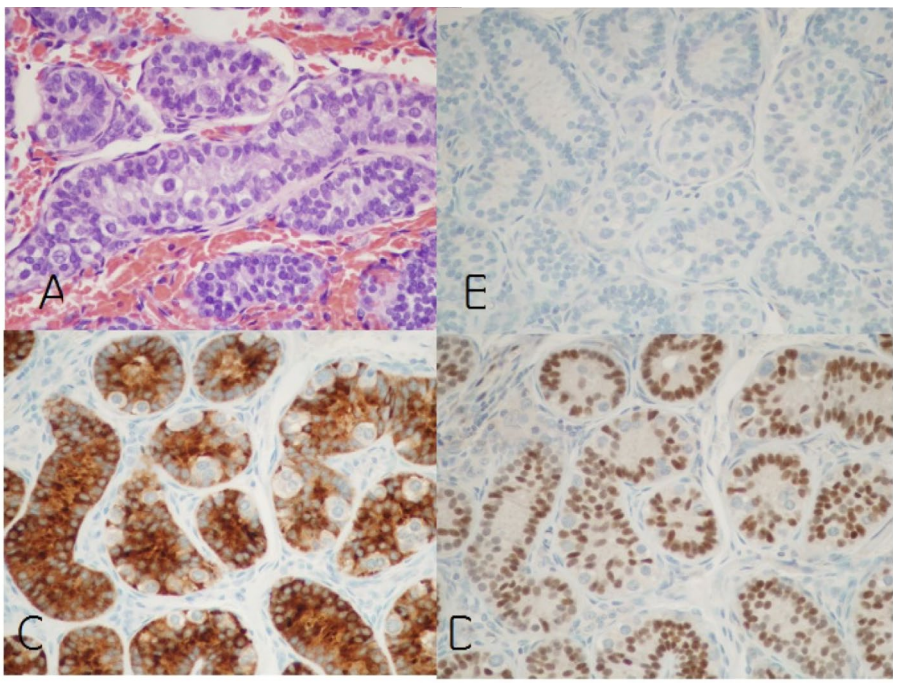
Introduction and Objective: A hydrocele is classified into two types by etiology. Noncommunicating type occurs at any age, mostly in adults. The treatment of choice of noncommunicating hydrocele is a hydrocelectomy, an incision is made into the scrotum. Communicating type present at birth, generally found in infants and young children. In most of the cases, a patent processus vaginalis would be found and would require to be ligated via inguinal incision, as standard surgical approach for hernia in children. Several studies of pediatric hydrocele repair have been reported, but there are no definite guidelines that clearly demonstrates a necessity of hydrocelectomy in pediatric hydrocele. Thus, we reviewed the outcomes of hydrocele repair to assess the necessity of hydrocelectomy.

Materials and Methods: A total of 77 boys received hydrocele repairs from March 2014 to January 2017. The patients were divided into 2 groups. Group 1 consisted of 45 patients who underwent high ligation with hydrocelectomy or unroofing via inguinal incision. Group 2 included 92 patients who received laparoscopic high ligation with or without scrotal aspiration. The surgical complication or recurrence were assessed between the groups. Patient visitations were arranged at 1 week, 1 month, 1 year after surgery. We compared the baseline information and surgical outcomes between the groups.

Results: The median age of patient was 27 months (range 19-65 months) in group 1 and 39 months (range 18-136 months) in group 2. Of the 45 patients in group 1, the hydrocele was right-sided in 30, left-sided in 13, both-sided in 2 cases. Of the 92 patients in group 2, the hydrocele was right-sided in 40, left-sided in 28, both-sided in 24 cases. The mean operative time was 25 and 13 min for group 1 and group 2, respectively. Median follow-up period was 20 months (2-34 months) in group1, 18 months (1-32 months) in group 2. No postoperative hydrocele recurrence was observed in group 1. Two patents in group 2 experienced recurrence due to incomplete enclosing of internal inguinal ring. Among them, 1 patient underwent laparoscopic repair, 1 patient underwent only high ligation through the inguinal incision. Eleven children had postoperative scrotal swelling or hematoma in group1. No complication happened in group 2. Of the group 2, 3 cases had no patent processus vaginalis (PPV) identified at laparoscopy and of them 2 were converted to open surgery through a scrotal incision, 1 was just aspirated.

Conclusion: Most pediatric hydroceles are communicating. Therefore, it was not necessary to remove the hydrocele sac in pediatric hydrocele. The high ligation of PPV is only an effective procedure for pediatric hydroceles. There were two recurrences in group 2. The recurrent hydroceles were treated with only high ligation, again. The cause may have been that the PPV was not completely sealed or the PPV was inadvertently released by the incomplete knot.

UP.306, Figure 1. Seminiferous Tubule with Germ Cell (x400)



A: H&E, B: OCT ¾ C: inhibin D: WT1

UP.306

Histological Features of the Testicular Nubbin in The Vanishing Testis: Is Surgical Exploration Necessary?

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Introduction and Objective: Vanished testis syndrome is identified in up to 35% of cases of nonpalpable testis. It seems that this syndrome is a common phenomenon; however, the optimal management of this condition remains unclear. We reviewed histopathological studies of the testicular nubbins associated with the vanishing testis syndrome, and determined whether surgical removal is indicated based on the histological findings.

Materials and Methods: Between Jan. 1996 and Dec. 2015, a testicular nubbin consistent with a vanishing testis was excised in 62 patients. We reviewed the medical records, operative summaries, surgical pathology reports and slides. We also noted whether the testis was palpable or nonpalpable and whether laparoscopy had been done before inguinal exploration. The microscopic slides were examined in each case.

Results: The ages of patients ranged from 6 months to 35 years. On physical examination, no palpable testis was found in the scrotum in 48 patients. In 12 patients, there was a small palpable nodule thought to be a testis, 3 of which were within the inguinal canal. The surgical approach was via an inguinal incision in 58 patients. The 4 patients underwent laparoscopy followed by inguinal exploration. Of the explorations, 45 were on the left and 15 on the right, 2 patients underwent bilateral exploration. All 62 cases had fibrosis; calcifications were present in 25 and hemosiderin deposits in 28. An epididymis was present in 4 (6.5%) and vas deferens in 49 (79.1%) cases. Recognizable testicular elements (Seminiferous tubules) were present in 7 (11.2%) nubbin. The 5 (8%) with seminiferous tubules had germ cells identified (Fig. 1). No recognizable Leydig cells were present in the stroma surrounding the seminiferous tubules. In all cases, intratubular germ cell neoplasia (ITGCN) was not present.

Conclusion: The histological evaluation of testicular nubbin has confirmed the presence of germ cells in 5 (8%) cases. The optimal management of the testicular nubbin is controversial. But, the presence of viable germ cell elements at least indicates a potential for germ cell-derived neoplasia. Thus, surgical removal of testicular remnant tissue should be recommended to prevent malignant transformation. However further study needed for ITGCN at remnant nubbin.

UP.307

The Efficacy of Urinary Neutrophil Gelatinase-Associated Lipocalin and β2-Microglobuline for Early Detection of Renal Injury in Febrile Infants with Urinary Tract Infection

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Introduction and Objective: In case of infants visiting a hospital with fever, when pyuria is found out, we start treating antibiotic therapy according to clinical judgment. Afterwards, the confirmation tests will be carried out with renal ultrasonogram, DMSA renal scan. Urinary Neutrophil Gelatinase-associated Lipocalin (NGAL)/β2-Microglobuline (β2-MG) is an effective test for early detection of proximal tubule injury. We want to recognize the efficacy of urinary NGAL/β2-MG for the differentiation between upper and lower UTIs (urinary tract infections) and early detection of renal injury in febrile infants with UTI.

Materials and Methods: From September 2015 to May 2016, among the 163 infants who were diagnosed with the diagnosis of febrile UTI, 86 patients who were tested DMSA renal were enrolled. Prior to antibiotics therapy, all patients were tested uNGAL and β2-MG. DMSA renal scan was carried out within three days. We determined the presence and degree of photon defects in DMSA renal scan. And we compared to the value of the NGAL/β2-MG and analyzed the diagnostic capability of the acute pyelonephritis and renal injury.

Results: Among 86 patients, 40 (46.5 %) patients were identified the photon defects in DMSA renal scan. The 26 patients were planar (8/26, 30.8%), and 60 patients were SPECT (32/60, 53.3%). Among them, single defect was observed in 24 cases, multiple defects (more than 2 defects) were observed in 16 cases (2 defects; 12 patients, 3 defects; 3 patients, 4 defects; 1 patients). The mean value of the urinary NGAL was 304.1 (2.1-1088.6). Urinary NGAL, which had a photon defect, was 374.7 (34.5-1088.6) and 247.1 (2.1-1066.8) in no photon defect (p = 0.029). The mean value of the uNGAL/uCreatinine (uCr) was 20.5(0.35-105.42). Urinary NGAL/uCr, which had a photon defect, was 19.3 (1.92-43.11) and 21.6 (0.35-105.42) in no photon defect (p=0.573). The mean value of the uβ2-MG was 0.9 (0.19-16.70). Urinary β2-MG, which had a photon defect, was 0.68 (0.19-5.68) and 1.1 (0.19-16.70) in no photon defect (p=0.368). The mean value of the uβ2-MG/uCr was 0.067(0.00-0.77). Urinary β2-MG/uCr, which had a photon defect, was 0.0401 (0.00-0.25) and 0.0905 (0.01-0.77) in no photon defect (p=0.073). The mean value of the serum White Blood Cell (WBC) counts was 16189.1 (5220.0-36050.0). Serum WBC counts, which had a photon defect, was 16933.1 (5220-28520) and 15571.7 (1429-36050) in no photon defect (p=0.303). The mean value of the serum C-reactive protein (CRP) was 5.5(0.01-20.6). Serum CRP, which had a photon defect, was 7.7 (0.62-20.56) and 3.7 (0.01-14.99) in no photon defect (p=0.000). The mean value of the uCr was 5.52 (0.01-20.56). Urinary Cr, which had a photon defect, was 21.17 (0.62-20.56) and 14.86 (1.93-62.47) in no photon defect (p= 0.038).

Conclusion: Urinary NGAL was helpful for the early detection of the renal injury in the febrile UTI. In case of suspecting the UTI in infants with fever, we should perform the accurate diagnosis and treatment by adding uNGAL test.

UP.308

Prune-Belly Syndrome. Is Penile Structures Similar to Normal Fetuses?

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Introduction and Objectives: We aimed to compare the penile structures of normal fetuses with the penile structures of a fetus with Prune-belly syndrome (PBS).

Materials and Methods: We studied the penises of 6 human fetuses without anomalies and 1 fetus with prune belly syndrome with 17 weeks post-conception. We used histochemical and morphometric techniques to analyze the parameters of total penile area, area of corpora cavernosa, area of corpus spongiosum, and thickness of tunica albuginea (in the dorsal and ventral regions using ImageJ software (National Institutes of Health, Bethesda, Maryland). In addition, we analyzed the collagen, smooth muscle fibers and elastic system fibers in the corpus cavernosum and in the corpus spongiosum. These elements were identified and quantified as percentage by using the Image J software (NIH, Bethesda, USA).

Results: Total area of the penis: normal = 3.78 mm2 and PBS = 1.05 mm2. Area of the corpora cavernosa: normal = 1.642 mm2 and PBS = 0.280 mm2. Area of the corpus spongiosum: normal = 0.636 mm2 and PBS = 0.160 mm2; Thickness of the tunica albuginea of the corpora cavernosa in the dorsal region: normal = 0.049 mm and PBS = 0.021mm; Thickness of the tunica albuginea of the corpora cavernosa in the ventral region: normal = 0.038mm and PBS = 0.014 mm. Microscopic structures in the corpora cavernosa - collagen: normal = 30.21% and PBS = 13.84%; smooth muscle cells: normal = 10.79% and PBS = 3.50%; elastic system fibers: normal = 3.18 and PBS = 1.66. Microscopic structures in the corpus spongiosum – collagen: normal = 37.24% and PBS = 17.67%; smooth muscle cells: normal = 5.30% and PBS = 1.70%; elastic system fibers: normal = 7.85% and PBS = 4.41%.

Conclusions: The penis of the fetus with prune belly syndrome presented significant difference in all parameters analyzed. These alterations could be associated to the characteristics of the syndrome that are defined by absence, deficiency or congenital hyperplasia of the abdominal wall musculature, bilateral cryptorchidism and abnormalities of the urinary tract. To our knowledge, this is the first study considering the penile structures in prune belly syndrome.

UP.309

Nerves and Vessels in the Corpora Cavernosa and Corpus Spongiosum. Analysis of Their Development in the Human Penis during the Whole Fetal Period

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Introduction and Objectives: Although nerves and vessels of the penis play important role in erection, there are few studies on their development in human fetus. Therefore, the objective of the present study is

to analyze, quantitatively, in the corpora cavernosa (CC) and corpus spongiosum (CS), the development of the nerves and vessels in the fetal penis at different gestational ages.

Materials and Methods: Fifty-six fresh, macroscopically normal human fetuses aged from 13 to 36 weeks post-conception (WPC) were used. Gestational age was determined by the foot length method. Penises were immediately fixed in 10% formalin, and routinely processed for paraffin embedding, after which tissue sections from the midshaft were obtained. We used immunohistochemical staining to analyze the nerves and vessels in the CC and in the CS. These elements were identified and quantified as percentage by using the Image J software.

Results: The quantitative analysis showed that the percentage of nerves varied from 3.03% to 20.35% in the CC and from 1.89% to 23.88% in the CS. The linear regression analysis indicated that nerves growth (incidence) in the CC and CS correlated significantly and positively with fetal age ($r=0.9421$, $p<0.0001$) and ($r=0.9312$, $p<0.0001$), respectively, during the whole fetal period studied. Also, the quantitative analysis showed that the percentage of vessels varies from 2.96% to 12.86% in the CC and from 3.62% to 14.85% in the CS. The linear regression analysis indicated that vessels growth (incidence) in the CC and CS correlated significantly and positively with fetal age ($r=0.8722$, $p<0.0001$) and ($r=0.8218$, $p<0.0001$), respectively, during the whole fetal period studied. In addition, the linear regression analysis demonstrated a more intense growth rate of nerves, in the CS during the 2nd trimester of gestation, when compared with the nerves in CC. Also, the linear regression analysis demonstrated a more intense growth rate of vessels in the CS when compared with the CC, during the whole fetal period studied.

Conclusions: In the fetal period, the human penis undergoes major developmental changes, notably in the content and distribution of nerves and vessels. We found strong correlation between nerves and vessels growth (incidence) with fetal age, both in the CC and CS. There is significant greater proportional amount of nerves than vessels during the whole fetal period studied.

UP.310

Female Epispadias Managed by Single-Stage Subsymphyseal Cystoscopic-Guided Bladder Neck Plication, Urethral Elongation and Urethrogenitoplasty: A Single Center Long-Term Follow-Up

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Introduction and Objective: Complete female epispadias is a rare genitourinary anomaly. Traditional surgical approaches were staged procedures. We previously introduced a single stage technique using subsymphyseal cystoscopic-guided bladder neck plication, urethral elongation by shiny interclitorial flap and urethrogenitoplasty. The main goal in treatment is satisfactory continence, upper tract preservation and functional and cosmetic external genitalia repair.

UP.310, Table 1. Grading of Urinary Incontinence

Grade	Definition
0	Completely dry (day and night)
1	Occasionally wet; with infrequent episodes of urinary incontinence
2	Frequently wet; with dry intervals lasting <3 h during a 24-h period
3	Totally incontinent; with no appreciable dry period

We present the long-term outcomes of single-institution experience of 24 females with epispadias undergone our novel technique.

Materials and Methods: A retrospective chart review was conducted to gather records of patients who had undergone our surgery technique between 1994 and 2014. All patients had classic epispadias at presentation: bifid clitoris; patulous urethra and closed or minimally separated pubic bones. A single surgeon (AMK) performed all surgical techniques. The level of continence before and after the surgery was evaluated based on a urinary incontinence grading (Table 1). Social continence was defined as dry periods of ≥3h during the day (grade 0 and 1).

Results: Out of 27 cases, we were able to contact 24 patients. Of those, 22 cases presented with total incontinence (grade 3) while two patients presented with intermittent incontinence (grade 2). Patients' mean age at the time of surgery was 4.2 years (range 1-12). The mean (range) follow-up period was 8.3 years (1-14). Four patients were not toilet-trained at last follow-up visit. Out of 20 toilet-trained cases, ten patients (50%) were completely dry (grade 0) and ten patients (50%) had occasional incontinence (grade 1). The cosmetic appearance of the external genitalia was good in all patients. All 24 girls were social continence at final follow-up.

Conclusion: The present series suggest that single stage subsymphyseal reconstruction has a high success rate in achieving continence in female epispadias with a cosmetically acceptable appearance. We recommend this technique as a simple and effective method for restoring bladder neck resistance with promising long-term results.

UP.311

Pelvic Floor Electromyography and Urine Flow Patterns in Children with Secondary Vesicoureteral Reflux and Lower Urinary Tract Symptoms

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Introduction and Objective: To determine the different urine flow patterns and active pelvic floor electromyography (EMG) during voiding in children with vesicoureteral reflux (VUR) after toilet training

UP.311, Table 1. Characteristics and Urine Flow Patterns of All Patients

	Patient n. (%)	Urine flow patterns			
	Total	Normal (%)	Staccato (%)	Interrupted (%)	Plateau (%)
Age (yr) , mean ± SD (range)	7.1± 2 (5-13)	6.8±1.8 (5-11)	7.3 ± 2.1 (5-13)	7.6±2 (5-12)	6.6±2 (5-12)
Female (%)	172 (77.8%)	58 (33.7%)	67(38.9%)	34(19.7%)	13(7.5%)
Male (%)	49 (22.2%)	16 (32.6%)	14 (28.5%)	7 (14.2%)	12 (24.4%)
Total	221	74 (33.5%)	81(36.7%)	41(18.6%)	25 (11.3%)
Bilateral VUR§	98	28 (28.5%)	38 (38.7%)	20 (20.4%)	12 (12.2%)
Unilateral VUR§	123	46 (37.3%)	43 (34.9%)	21 (17%)	13 (10.5%)
EMG¥ activity during voiding	108	0 (0%)	69 (63.8%)	24 (22.2%)	15 (13.8%)

VUR = vesicoureteral reflux, EMG = electromyography

UP.311, Table 2. Lower Urinary Tract Symptoms in Different Flow Groups of Patients

	Patient n. (%)	Urine flow patterns			
	Total	Bell shape	Staccato	Interrupted	Plateau
Urinary tract infection n.%	192	67(34.8%)	72(37.5)	32(16.6%)	21(10.9%)
Constipation n.%	54	20(37%)	20(37%)	9(16.6%)	5(9.2%)
Daytime incontinence n.%	31	2(6.4%)	20(64.5%)	6(19.3%)	3(9.6%)
Nocturnal enuresis n.%	64	19(29.6%)	29(45.3%)	9(14%)	7(10.9%)
Urgency n.%	44	12(27.2%)	20(45.4%)	9(20.4%)	3(6.8%)
Holding maneuver n.%	56	2(3.5%)	29(51.7%)	19(21.4%)	6(10.7%)

as well as presenting the prevalence of lower urinary tract symptoms in these patients.

Materials and Methods: 230 children with secondary VUR were included in the study from Sep 2013 to Jan 2015. The reflux was diagnosed with voiding cystourethrography. The study was comprised an interview by means of a symptom questionnaire, a voiding diary, uroflowmetry with EMG measurement and assessment of residual urine volume. Urine flow patterns were classified as bell shape, staccato, interrupted, tower and plateau based on the current International Children's Continence Society guidelines.

Results: Of 230 neurologically and anatomically normal children who had VUR (180 girls, 50 boys, mean age: 7.1± 2 years, range: 4 to 13) and underwent uroflowmetry combined with EMG (UF/EMG), 155 (67.4%) had an abnormal urine flow pattern. An active pelvic floor EMG during voiding was confirmed in 113 (49.1%) children. The flow patterns were staccato in 78 (33.9 %), interrupted in 42 (18.3%), Plateau in 27 (11.7%), tower in 12 (5.2%) and a bell shape or normal pattern in 71 (30.9%). Urinary tract infection (UTI), enuresis and constipation respectively, were more frequent symptoms in these patients.

Conclusion: Bladder/bowel dysfunction is common in patients with VUR that increases the risk of breakthrough UTI in children receiving antibiotic prophylaxis and reduces the success rate for endoscopic injection therapy. Therefore, investigation of voiding dysfunction with primary assessment tools such as UF/EMG can be used prior to treating VUR.

UP.312

Is There Any Association Between Allergic Reactions and Meatal Stenosis?

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Introduction and Objective: Meatal stenosis is considered as a common complication of circumcision. It is also associated with several skin disorders of the penis in children, such as Lichen Sclerosus and bullous disorders. The exact pathophysiology of meatal stenosis is still debatable, but a possible underlying cause of meatal stenosis is considered as meatal irritation and inflammation. This study aims to evaluate the role of atopy (i.e. atopic dermatitis, allergic rhinitis, asthma, and food allergies) and its consequences on developing meatal stenosis.

Materials and Methods: After obtaining ethics approval from institutional review board, between June 2009 and May 2016, a retrospective chart review was conducted to gather records of patients with meatal stenosis. History of any allergic reactions including skin allergy, seasonal rhinitis, asthma, and food allergies was considered as positive history of atopy. Data were analyzed by one sample binomial test using SPSS v20.

Results: During the study period, a total of 411 boys were found to have meatal stenosis. Mean age was 3.6 (range 6 months to 11 years) years. Of all, 271 (65.9 %, CI95% = 61.1 - 70.5) had history of allergic reactions. Comparing to prevalence of atopy among boys reported in the recent studies (24.7% - 40%), patients with meatal stenosis have a significantly higher (P-value < 0.001) probability of suffering from allergic reactions.

Conclusion: This preliminary study showed a remarkable relation between hypersensitivity reactions and meatal stenosis in boys. Therefore, in children with an allergic background, hypersensitivity of penile skin might be observed. Persistent inflammation in that area could potentially lead to meatal stenosis. Moreover, it is more likely to encounter recurrence of meatal stenosis after surgical repair in patients with history of atopy. However, more prospective investigations are mandatory in this regard prior to proving this pathophysiology.

UP.313

Effects of Transcutaneous Interferential Electrical Stimulation on Pelvic Floor Emg Lag Time in Children with Voiding Dysfunction

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Introduction and Objective: According to the International Children's Continence Society guidelines, Electromyography (EMG) lag time defines as the time interval between the initiation of pelvic floor relaxation and the actual start of urine flow which is normally ranges between 2 to 6 seconds. Electrical stimulation has been recently used as an alternative option for different refractory lower urinary tract syndromes in adults and children. In the current study, we assessed the efficacy of transcutaneous interferential (IF) electrical stimulation on pelvic floor EMG lag time in children with voiding dysfunction.

Materials and Methods: We retrospectively reviewed the documents of all children with persisted lower urinary tract symptoms who underwent IF electrical stimulation between May 2007 to Dec 2014. 23 neurologically and anatomically normal children (mean age: 7.7 years, range: 4 to 13) with lower urinary tract symptoms were included in this study. Children underwent IF electrical stimulation for 15 courses, 2 times per week. All children were symptomatic and had abnormal urine flow pattern with an EMG lag time of 6 seconds or more on initial uroflow/EMG. For all children, a voiding chart, uroflow/EMG studies and bladder ultrasounds were performed before and after the treatment. Maximum and average urine flow rates, EMG lag time and post-void residual volume were analyzed.

Results: Mean maximum and average urine flow rates improved from 14.1 and 7.6 to 19.7 ml/s and 9.5ml/s, respectively, while mean EMG lag time decreased from 11.7 to 5.2 seconds after treatment (all P<0.05). Also, post-void residual volume decreased significantly from 33.6 to 7.6 ml at the end of the treatment courses. From these 23 children, 17 (75%) reported subjective symptomatic relief.

Conclusion: To the best of our knowledge this is the first report on effects of neuromodulation on pelvic floor EMG lag time in children with voiding dysfunction. This study indicates that IF therapy appears effective, safe and reproducible in reduction of pelvic floor EMG lag time which resulted in improvement of pelvic floor and bladder neck relaxation.

UP.314

Extended Oral Alkalization Therapy for Pediatric Radiolucent Nephrolithiasis is of No Value

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Introduction and Objective: Medical dissolution therapy is a well-tolerated, effective treatment (≈ 70%) for radiolucent renal stones in children. In this study, we prospectively evaluated the efficacy of extended dissolution therapy versus shock wave lithotripsy (SWL) for those with failed the 3- month oral alkalization treatment.

Materials and Methods: Between 2011-2015, 32 out of 143 children with radiolucent renal calculi who had failed 3- month oral alkalization treatment was included in the study. Median age was 5 years (range 4 to 13). Median stone length was 12 mm (range 7 to 18). Patients were randomly divided into 2 groups; the extended medical group (16 patients) received potassium sodium hydrogen citrate at a dose of 1-2 mEq/kg per day for further 2 months (target urine pH 7.2-7.8) and the SWL group (16 patients) were treated with a Lithotripter S under general anesthesia. Complications were recorded for both groups. Patients were considered stone free when imaging within 3 months showed no evidence of stones.

Results: The stone-free rate was 87.5% after a single session of SWL vs. 6.25% after extended dissolution therapy (p < 0.001). One patient in SWL group experienced renal colic during followup (p = 0.310).

Conclusion: SWL is the treatment of choice after failure of 3-month medical dissolution therapy for pediatric radiolucent renal stones.

UP.315

Urodynamic Efficacy of Mirabegron in Pediatric Patients with Spina Bifida

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Introduction and Objective: Mirabegron has shown its efficacy in adult overactive bladder patients. However, there has been only a few reports regarding its use in patients with neurogenic bladder or pediatric patients. We retrospectively analyzed the urodynamic efficacy of Mirabegron in pediatric patients with spina bifida.

Materials and Methods: Patients with spina bifida who underwent urodynamic study before and after the use of Mirabegron in our hospital were included in this retrospective analysis.

Results: Total 39 (27 male and 12 female) patients met the criteria and were included. Meningomyelo-

cele, lipomeningomyelocele and sacral agenesis had been diagnosed in 11, 26, and 2 patients, respectively. Mirabegron was started at median 12.3 (IQR: 7.5-16.0) years. Pre-Mirabegron urodynamic study was performed at median 12.1 (IQR: 7.1-15.8) years. All of them were on anticholinergic medication before Mirabegron treatment. Pre-Mirabegron urodynamic study was performed after washout period of anticholinergics in 24 patients (group 1). In the other 15 patients, it was performed with anticholinergics (group 2). After 8-12 weeks of Mirabegron (50mg) alone therapy, urodynamic study was performed again at median 12.6 (7.8-16.1) years. In group 1, maximal cystometric capacity was increased from 244.5 (IQR: 167.0-325.3) to 353.5 (IQR: 289.0-393.8) ml (p=0.002). Compliance was increased from 11.4 (IQR: 5.9-20.0) to 24.0 (IQR: 12.7-38.9) ml/cmH2O (p=0.007). Involuntary contraction was observed in 9 (37.5%) and 6 (25.0%) patients before and after Mirabegron, respectively (p=0.534). In group 2, maximal cystometric capacity was 211.0 (IQR: 166.0-248.0) before Mirabegon and 261.0 (IQR: 219.0-317.0) ml after Mirabegron (p=0.089). Compliance was 14.8 (IQR: 7.1-17.9) and 20.8 (IQR: 15.6-25.3) ml/cmH2O (p=0.087), respectively. Involuntary contraction was observed in 3 (20.0%) and 5 (33.3%) patients before and after Mirabegron, respectively (p=0.385). Among 39 total patients, vesicoureteral reflux was observed in 11 renal units in 7 patients before Mirabegron and 5 renal units in 5 patients after Mirabegron.

Conclusion: Mirabegron showed urodymic efficacy regarding maximal cystometry capacity and compliance in pediatric patients with spina bifida. Although it showed better MCC and compliance when compared with anticholinergics, it was not statistically significant. Large, multi-center prospective study should be followed.

UP.316

Systematic Review of Malignant Priapism and Non-Urologic Primitive Tumors

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Introduction and Objectives: Metastases to the penis from other cancers are rare but can have severe consequences. Usually, penile metastasis signifies a poor prognosis but little else is known. The aim of this study is to systematically review all available literature on penile metastatic disease in order to gain more information on the presentation and prognosis of this manifestation of metastatic disease.

Materials and Methods: We reviewed the literature relating to all case reports, series and reviews about penile metastasis through a systematic Medline search. We identified 63 articles and 69 patients with an age range of 57 to 92 years and a mean follow up of 15.6 months (range 5-30).

Results: Metastases were located on the root (38.8%), the shaft (38.8%) or the glans (22.4%) of the penis. In most cases the diagnosis of penile metastasis was made after the primary cancer had been diagnosed. A single small penile nodule was the most common presentation. Thirty patients with urological metastasis (43%) have a median cancer specific survival of 18 months instead 39 patients with non-urological metastasis (57%) have a median cancer specific survival of 11months. Ten patients presented with malignant priapism (5 from urological metastasis and 5 from non-urological metastasis). Median survival after the diagnosis of penile metastasis was 10 months (range 6-18 months). Patients with priapism from urological tumor have a median cancer specific survival of 30 months the patients with priapism from non-urological tumor have median cancer specific survival of 15 months. Kaplan-Meier analysis demonstrated that patients presenting with priapism and those with metastases from non-urologic tumors have a significantly worse prognosis (age adjusted Log Rank: p=0.037 for priapism vs no priapism and p=0.045 for urologic vs non-urologic).

Conclusions: This systematic analysis shows that prognostic differences exist based on the presentation of penile metastasis. Survival is substantial and treatment should therefore take into account definitive symptom improvement and quality of life.

UP.317

Is There a Role for Routine Histopathological Assessment of Circumcision Specimens?

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Introduction and Objective: We set out to determine the rate of penile cancer detected on histological assessment of routine circumcision specimens when malignancy was not suspected at time of operation.

Materials and Methods: We conducted a retrospective audit of all circumcisions performed across two major metropolitan health networks in Melbourne, Australia. We analyzed 149 cases over 3 years across 7 Hospitals. The preoperative indication for circumcision and specimen histopathological results were compared.

Results: Forty-nine were excluded as no specimen was sent for histopathological assessment resulting in 97 cases for analyses in the study. Of these, 92 cases were for benign indications with no suspicion of malignancy and the rate of malignancy on the histology specimens was 0%. 50% of cases with suspicious lesions were malignant on histology.

Conclusion: Our results showed that when there was no benefit in histological analyses of foreskin specimens when there was no clinical suspicion of malignancy. Thus, routine histological analyses of circumcision specimens can be abandoned without increasing the risk of missing any malignancy thereby compromising the quality of care provided.

UP.317, Table 1.

Pre-operative suspicion		Histopathology outcome	
		Benign	Malignant
Benign	92	92	0
Malignant	4	2	2
Warts	2	2	1

UP.318

Outcomes of Two Week Wait Urology Cancer Pathway NHS Referrals and Ways to Improve It

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Introduction and Objective: Urological cancers (renal, ureter, bladder, prostate, penile, urethra, testicular) account for 15.4% of all new cancers in England and 12.1% of deaths from cancer. NICE guidelines state that those suspected of having urological cancer should be seen within 2 weeks from referral date. Firstly, what is the incidence of urological malignancy among those referred through the two weeks wait referral pathway. Secondly, association between different referral criteria and cancer diagnosis. Finally, the identification and characterisation of inappropriate referrals and way to improve this pathway.

Materials and Methods: Retrospective audit data was collected from Sandwell and West Birmingham Hospitals two week wait urological cancer referral list for the past 12 months. A sample of 250 patients was selected from the first referral date of 2016.

Results: Bladder & renal cancer: Fifty seven percent of the referrals made were for bladder & renal cancer while 26% of cancers diagnosed were bladder/renal. The most number of referrals were due to visible haematuria and 7.6% of these were found to have cancer. Two out of the 7 referrals for palpable renal mass/renal mass found on ultrasound scan were found to be malignant. Interestingly, there were no cancer diagnoses found in referrals made for 'haematuria with persistent urinary tract infection' and 'unexplained non-visible haematuria'. Prostate cancer: Thirty two percent of referrals made were for prostate while 69% of the cancers diagnosed were prostrate; the majority of urological cancers identified. The majority of referrals were due to raised age-related PSA. The minimum PSA values as set out by the NICE guidelines did not miss any cancers in any given age group. Testicular cancer: Out of the 21 referrals are made and 2 cancers were identified (9.5% detection rate). Penile cancer: Two referrals were made with no cancers identified. There is subjectivity with interpretation of 'ulceration in the glans or prepuce'.

Conclusion: Out of the 250 referrals made via this pathway 17% were cancer diagnoses, excluding the 10% that were lost to follow up. The largest number of referrals were made for bladder & renal cancer, how-

ever, the organ group with the most cancer diagnoses was prostate

UP.319

What Are the Prognostic Factors in Penile Cancer?

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Introduction and Objective: Penile cancer is responsible for a higher morbidity and mortality. The objective of this work is to analyse the experience of a tertiary hospital concerning the diagnosis, treatment and survival of patients with penile cancer.

Materials and Methods: Retrospective study of 59 patients (5.4 cases/year) with penile cancer between January 2006 and June 2016. The risk factors, pathological data, surgeries and adjuvant treatments were evaluated. The average age was 67.3 ± 14 years, with lesions with 3.2 ± 1.7 cm. 3.4% were HIV positive, 16.9% were HPV positive and 44.1% had phimosis. In terms of premalignant lesions, it was found erythroplasia of Queyrat (3.4%), balanitis xerotica obliterans (10.4%) and Bowen disease (1.7%).

Results: The most frequent initial surgery was partial penectomy (67.8%), followed by the radical circumcision (16.9%) and local excision (6.8%). There was a significant correlation between biopsy and surgery specimen report (p <0.001): both reveals squamous cell carcinoma (96.6% vs 93.2%), T3 (38.9%) and T1 (31.5%), well differentiated (61.5%). Eighty-eight percent had negative surgical margins. Inguinal lymphadenectomy has been done in 41% and 8.5% has also performed pelvic lymphadenectomy: 14 ± 10 nodes were excised, being 1.2 ± 2.3 nodes locally invaded by the tumor. Lymphadenectomy was not complete by surgical irresectability in 8.5%. Twenty two percent were submitted to another surgery: partial penectomy (53.8%) and total penectomy (38.5%). Chemotherapy was performed in 13.6% and radiotherapy in 5.1%. 33.9% have developed complications: mainly lymphedema (15.3%) and wound infection (13.6%). Metastasis have been developed in 44.1% mainly nodal (11.9%) and bone (11.9%). The factors that caused statistically significant differences in survival rates were the initial T (p <0.001), M (p 0.03) and R stage (p 0.003), vascular (p 0.006), urethral (p 0.018) and corpus spongiosum (p 0.004) invasion. After a mean follow-up of 36.7 ± 43.2 months, 57.6% have died. The median survival was 37 ± 10.4 months.

Conclusion: The advanced stage of the primary tumor, the presence of systemic metastasis and other pathological changes are factors that negatively influence the disease course.

UP.320

International Experience in the Management of Primary Penile Tumors Involving the Glans: Lessons Learned from A Multi-Center Collaboration

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Introduction and Objective: Although management of penile squamous cell carcinoma has favoured penile sparing surgery, the optimal treatment strategy remains unknown for tumors involving the glans penis. We sought to analyse the local recurrence and survival outcomes of penile sparing surgery in patients with penile carcinoma with glans involvement.

Materials and Methods: We performed a retrospective review of 364 patients across 5 international tertiary referral centers between 2000 and 2013. All patients had tumors involving the glans penis. Management techniques included glansectomy, wide local excision, or laser ablation. Median follow-up was 40 months (IQR 15-72).

Results: The median age was 62 years (IQR 51-71). 67% (244) had glans only involvement, 29% (107) had glans and prepuce involvement, and 4% (13) had glans and shaft involvement. 23% (82) underwent glansectomy, 34% (123) underwent laser ablation, and 44% (159) underwent wide local excision. Glansectomy was associated with improved local recurrence rates with 1, 2, and 5-year local recurrence free survival of 91%, 84%, and 79% respectively (p<0.001). The 1, 2, and 5-year local recurrence free survival for laser ablation was 71%, 65%, and 47% respectively. The 1, 2, and 5-year local recurrence free survival for wide local excision was 87%, 74%, and 64% respectively. When stratified by tumors that were pT1, glansectomy was associated with improved local recurrence rates (p=0.003). Glansectomy was associated with improved local recurrence rates on multivariable analysis (HR 0.4, 95% CI 0.2-0.9, p=0.03). There were no differences between treatment groups for overall survival (p=0.66).

Conclusion: Penile sparing surgery of the glans remains an appropriate option for carefully selected patients. Glansectomy is associated with improved local recurrence compared to laser ablation and wide local excision, with optimized post-operative surveillance strategies developed based on patterns of recurrence.

UP.321

Laser Ablation as Monotherapy for Penile Squamous Cell Carcinoma: A Multi-Center Cohort Analysis

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Introduction and Objective: Although the trend towards penile sparing therapy is increasing for penile squamous cell carcinoma, outcomes for laser ablation therapy have not been widely reported. We assessed the clinical outcomes of penile cancer patients treated with only laser ablation.

Materials and Methods: A retrospective review was performed of 160 patients across 5 multi-center tertiary referral centers from 2000 to 2013. All patients underwent penile sparing surgery with only laser ablation for squamous cell carcinoma of the penis. Laser ablation was performed with Neodymium-doped yttrium aluminum garnet or carbon dioxide. Overall and recurrence free survival was calculated using the Kaplan-Meier method and compared with the log rank test.

Results: One hundred and fifty-six patients underwent laser ablation for penile cancer. The median age was 61 (IQR 52-71) years and median follow-up was 60.6 (IQR 32-92) months. The majority of patients were pTa/Tis (55, 35%) or pT1a (60, 39%). Only 20 (13%) had a poorly differentiated grade. The 5-year recurrence free survival was 46%. When stratified by stage, the 5-year local recurrence free survival was pTa/Tis: 53%; pT1a: 40%; pT1b: 33%; pT2: 52%. The inguinal/pelvic nodal recurrence was pTa/Tis: 0%; pT1a: 5%; pT1b: 17%; pT2: 22%. There were no differences among stages with respect to local recurrence free survival (p=0.93) or overall survival (p=0.2).

Conclusion: Laser ablation therapy is safe for appropriately selected patients with penile squamous cell carcinoma that are pT1a or lower. Due to the increased risk of nodal recurrence, laser ablation as the primary therapy may not be suitable for patients with pT1b disease or higher.

UP.322

The Management of Primary Squamous Cell Carcinoma of the Male Anterior Urethra – A Study of 69 Cases from a Single Centre

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Introduction and Objective: Primary squamous cell carcinoma (SCC) of the male anterior urethra is very

rare. In our supra-regional network the incidence is approximately 10% of the overall population of penile and urethral cancer patients. We believe that primary SCC of the urethra behaves in a similar fashion to penile SCC and therefore penile preserving surgery (PPS) can be adopted safely and effectively for these patients. Publications on urethral cancer are largely not gender, site or type specific therefore making the literature difficult to interpret. We aim to report our outcomes of management of this rare disease.

Materials and Methods: We reviewed our prospective database of all urethral cancer patients referred and treated from 2001 onwards. Patients with urothelial cancer, penile cancer extending in to the urethra and penile intraepithelial neoplasia were excluded. All patients were discussed at supra-regional MDT and their pathology reported by specialist penile pathologists according to the Royal College of Pathologists, UK dataset. All patients were managed by a similar pathway to penile cancer.

Results: Sixty-nine patients were included in our study with a mean age of 72 years. After a median follow up of 23 months (range 1-132) seventeen patients have died. Two patients died from unrelated causes; skull base cancer and metastatic colorectal cancer. Fifty-three patients (77%) had high grade disease (G3) and 38 patients (55%) had tumours with basaloid features. Twenty-one patients (30%) had advanced nodal disease at presentation (pN2). Forty-two patients (61%) were able to be treated with a single PPS.

Conclusion: Our study represents the largest known series of men with primary SCC of the anterior urethra. Unlike in penile cancer the majority of patients presented with high grade cancer. The large proportion of basaloid tumours suggests an association with human papilloma virus (HPV). We provide evidence to illustrate the tumour biology of this rare disease and also demonstrate that penile preserving surgery in this group is oncologically safe with the additional benefit of excellent functional outcomes.

UP.323

Outcome of Early and Delayed Repair of Penile Fracture in a Tertiary Care Hospital in Bangladesh

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Introduction and Objectives: Penile fracture is a rare surgical emergency. Although fracture of the penis can be easily recognized clinically, it is delayed-reported due to the embarrassing nature of the injury to the patient. We compare between early and delayed intervention of penile fracture in terms of overall and specific complications in order to raise awareness and exchange experiences.

Materials and Methods: From 30th July 2014 to 30th January 2016, a total of 27 patients diagnosed to have penile fracture were enrolled in the study group. The diagnosis was made based on the clinical findings in the patients. Those who came within 24 hours were considered as early presentation while those who came after 24 hours were considered as delayed presentation. Out of 27 patients with penile fracture, 15 were in early group while 12 were in delayed group. All the patients were treated by surgical repair by standard method.

Results: Mean age of the patients was 35 (range 15 to 60 years): The commonest presenting complaints were penile swelling 24 out of 27 (88.88%), pain 22 out of 27(81.48%), creaking sound 22 out of 27 (81.48%), detumescence during sexual intercourse or an erection 17 out of 27 (62.96%) and urethra bleeding 3 out 27(11.1%). Commonest causes of penile fracture were vigorous intercourse where female on top seventeen (62.9%), bending during erection 5 (18.5%), masturbation 3 (11.1%) and rolling over in bed two (7.4%). Out of 15 patients in early group, 3 (20%) patients presented with urethral injury. The commonest complications in delayed repair were plaque formation 3 out of 12 (25%), penile curvature 2 (16.6%), skin necrosis 2 (16. 6%) erectile dysfunction 1 (8.3%) and whereas on early repair no complication.

Conclusion: The early surgical correction had better results than delayed repair in terms of complications. Fracture of the penis is a surgical emergency which can be best managed by immediate surgical repair with excellent results even in the presence of urethral injury.

UP.324

Influence of Unilateral Orchidectomy on Contralateral Testis in Rat, Prepubertal and Postpubertal

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Introduction and Objective: The present study was conducted to investigate the influence of unilateral orchidectomy and age of orchidectomy on the subsequent contralateral testis.

Materials and Methods: Sixty-four Wistar-derived male rats divided randomly in 4 groups. Group 1 named immature intervention, group 2 immature control, group 3 mature intervention and group 4 mature control. In group 1, rats castrated unilateral at 30 days of age (prepubertal). In group 2 sham surgery (midscrotal incision) was done at same age. In group 3 rats castrated unilateral at 70 days of age (postpubertal) and in group 3 sham surgery was done at same age. 20 days after first surgery, in intervention groups contralateral orchiectomy was done and in control groups random orchiectomy (left or right) was done. Blood sampling for evaluation of serum testosterone was performed just before second surgery.

Results: Testis weight and the mean testicular weight per 100 g of body weight was greater in group 1 and 3. These parameters was greater in prepubertal group (group 1) than postpubertal group (3). There was no appreciable difference in serum testosterone levels in 4 groups.

Conclusion: Our research demonstrated that unilateral orchidectomy resulted in compensatory hypertrophy of the remaining testis and it decreased as the animals aged. unilateral orchidectomy does not lead to reduction in serum testosterone levels and remaining testis can retrieve a normal serum testosterone level.

UP.325

Unusual Rectal Gastrointestinal Stromal Tumor Presented as Prostate Mass: Case Series and Review of the Literature

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Introduction and Objective: Gastrointestinal stromal tumor (GIST) is a rare disease that accounts for less than 1% of gastrointestinal tumors. Rectal GIST only accounts for 5% of GIST population. Progression of the tumor sometimes causes lower urinary tract symptoms such as frequency or urine retention that mimic prostate enlargement. The best management is combination of imatinib and surgical wide excision.

Materials and Methods: We reported three cases of rectal GIST with prostate invasion. The patient's' symptom, image, medication, peri-operative condition, pathological report and follow-up result were all recorded and analyzed.

Results: Three patients with mean age of 65 (57-74) years old diagnosed GIST with prostate invasion. The initial complaint was lower urinary tract symptom such as frequency and incomplete sensation. Digital rectal exam found prostate mass in all cases. Elevated prostate-specific antigen (PSA) was found only in one patient (PSA: 9.21) whom later diagnosed prostate adenocarcinoma, Gleason score: 3+4. Different diagnosis method was used: CT-guide biopsy, transanal biopsy, and transrectal ultrasound guided biopsy. The patients received imatinib 400 mg per day for average 6.6 months. Follow-up image study showed average 62.5 percent tumor volume decreased. We performed robotic prostatectomy and anterior rectal wall tumor resection. Estimated blood loss was about 100ml. Average operation time was around 400 minutes. Frozen sections were made during operation due to blurred margin between tumor and normal tissue. Surgical margin was negative in all cases. Median follow-up was 22 months. No tumor recurrence was noted.

Conclusion: There were only 26 published cases previously. In our series, pathological reports showed the majority of the GIST tissues are spindle-shaped and showed low cellularity, possibly from post-treatment effect. There is still no golden treatment for rectal GIST. National Comprehensive Cancer Network published the multiple disciplinary teams was important for the treatment of GIST. We utilized robotic surgery with the wristed instrumentation and three-dimensional vision which has proven advantages compared to conventional laparoscopy, especially in confined spaces such as pelvis. Rectal GISTs can be treated with safe surgical procedure with promising oncological results.

UP.326

Italian Preliminary Results of Collagenase Clostridium histolyticum (Xiapex) for the Treatment of Peyronie's Disease

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Introduction and Objective: Peyronie's disease has a devastating effect on patients and their partners. Several non-surgical therapies have been tried in Peyronie's disease (PD). However, their efficacy remains questionable, as well-designed, placebo-controlled trials have failed to confirm favourable results. Collagenase clostridium histolyticum (CCH- Xiapex®) is the only licenced product for the treatment of PD as it has demonstrated safety and efficacy in several well designed clinical trials. The aim of our study is to evaluate the safety and efficacy after the first injection of Xiapex.

Materials and Methods: A prospective study of the outcome data for 14 patients (10 from Florence, 2 from Turin and 2 from Catania) having treatment with Collagenase clostridium histolyticum (CCH-Xiapex®) using a new shortened protocol of three injections at 4 weekly intervals. Patients were evaluated by history, examination, ICI test. Patients with calcified plaque and ventral curvature have been excluded. The parameters assessed included the angle of curvature, the IIEF, Global Assessment of Peyronie's Disease, and Peyronie's disease questionnaires (PDQ) performed at baseline and after the first injection. Penile block was performed using Lidocaine 1%. All patients had an intra-lesional injection of CCH (0.9mg) into the plaque at the point of maximal curvature. Patients were instructed to perform a stretching and a modelling manoeuvre for 4 weeks. Vacuum device was used in patients suffering from Erectile dysfunction.

Results: The mean patient age was 63 (43-75) years. Fourteen patients had the first injection. The mean penile curvature at baseline was 41° (30°- 55°). All patients (100%) had an improvement in curvature with a mean value of 9.78° (5°-20°) or 23.28% from baseline (8.7%-37.8%) after 1 injection. There was an improvement in the Erectile function and Intercourse Satisfaction domains of the IIEF questionnaire

Conclusion: In this first multicentric prospective study, preliminary results show the efficacy of Xiapex after the first injection.

UP.327

Surgical Correction of Adult Acquired Buried Penis: A Single Center Analysis on Surgical and Functional Outcomes

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Introduction and Objective: Few medical conditions as well as metabolic syndrome can potentially lead to an acquired buried penis. This rare clinical entity represents a real challenge for reconstructive urologists. Due to the rarity of the disturb, it has been rarely reported in the scientific literature. The purpose of our study is to identify the surgical and functional outcome of this challenging reconstruction in a wide cohort of patients.

Materials and Methods: Forty-six consecutive patients referred to our outpatient's clinic for a buried penis were retrospectively identified. Clinical data were retrospectively reviewed. Nevertheless, all patients were contacted through a telephone call and were asked to answer to an "ad hoc" created 4-items questionnaire in order to assess the functional outcomes and the satisfaction rate. As well as the surgeon who was enquired on the satisfaction for the postoperative result.

Results: The average age of the patients in our cohort was 49,8 (SD 17.4). The average BMI was 32,6 (SD 8.7). The average hospital stays occurred to be 5.1 (SD 5) days. 65.2% of our patients were affected by diabetes type I. The prevalent clinical presentations underlying the referral to our clinic was recurrent genital infections (8.7%), sexual problems (28.3%), urinary problems (26.1%), BXO (13%) and association of both sexual and urinary problems (23.9%). The surgical steps of the procedure were extremely variable according to the clinical presentations and included a circumcision (37%), a scrotoplasty (21.7%), a V-Y skin plasty (6.5%), a skin grafting of the penile shaft (STSG 13% - FTSG 37%), a suprapubic fat pad excision (63%), a apronectomy (39,1%) and a division of the suspensory ligament (26.1%). No intraoperative complications were recorded. Postoperative complications occurred in 23.9%. However, a minority of cases (8.3%) required a surgical revision. Focusing on functional results vaginal penetration ended up being more effective in most of the patients (97.8%), even of erectile function improved in a minority of patients (43.5%). The penile erogenous sensation was maintained in most of the patients (95.7%). Aesthetic appearance of the genitalia fully satisfied 71.7% of our patients. However, 8.7% of them declared to be extremely unsatisfied. The overall patients' satisfaction for the procedure resulted 84,8% as well as the surgeon's which ended up being 89.1%. The multivariate analysis did not show any statistically significant risk factor between the complications rate and the surgical revision apart from the BMI > 35 (p=0.03 and p=0.02).

Conclusion: Management of adult acquired buried penis is a challenging, yet correctable problem.

UP.328

The Use of Amplatz Renal Dilators in the Minimally Invasive Management of Complex Urethral Strictures

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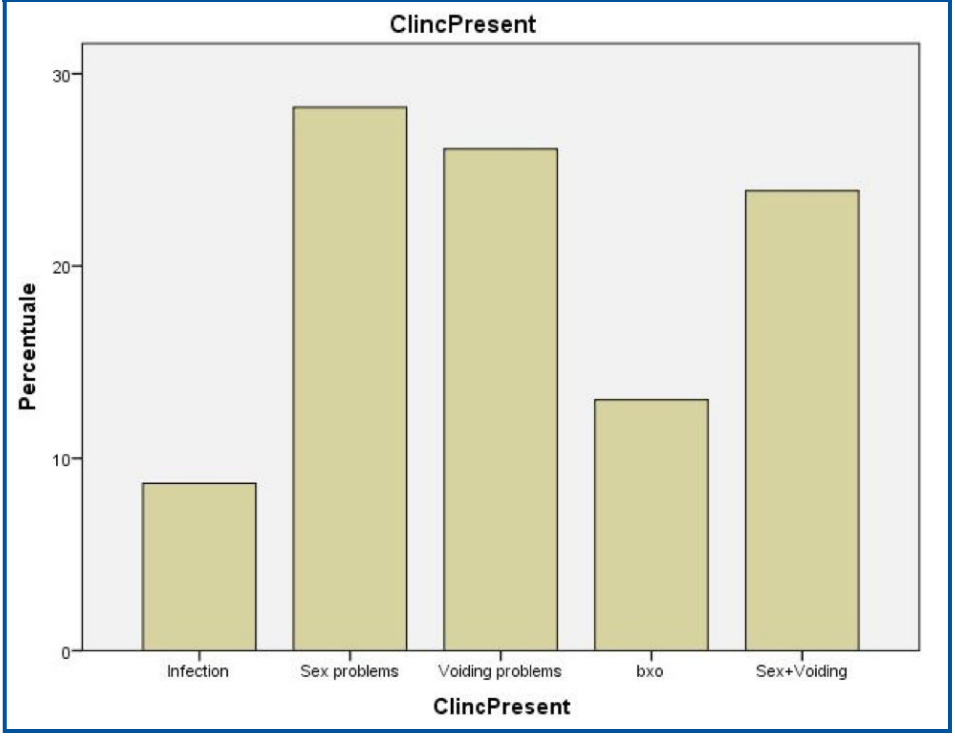
Introduction and Objectives: Urethral stricture is a common cause of bladder outlet obstruction in males. We present the outcomes of using Amplatz renal dilators in the management of complex urethral strictures

Materials and Methods: From September 2011 to August 2015, 34 patients with complex urethral strictures were treated with Amplatz renal dilatations and subsequent internal urethrotomy. The etiology was iatrogenic in 27 (79.4%) patients, idiopathic in 4 (11.8%), two (5.9%) presented with balanitis xerotica obliterans and one patient (2.9%) had a history of gonococcal urethritis. Strictures were located in penile (14,7%), bulbar (61,7%) and prostatic urethra (23,5%). Preoperative evaluation included uroflowmetry and ultrasound with post void residual volume measurement (PVR). The patients were also evaluated at 1,6 and 12 months postoperatively. Under spinal anesthesia, sequential dilatation with Amplatz renal dilators over an 8 Fr stylet were performed up to 24 Fr. Internal urethrotomy was then performed, except those with penile strictures. Folley catheter remained from 7 to 21 days postoperatively. All patients com-

UP.327, Figure 1.



menced a programme of self-intermittent catheterisations (ISC) for a year.

Results: The mean age was 46 (23-76) years. Complex strictures were defined those longer than 2 cm, or those with failed previous simple urethral dilatation or internal urethrotomy. The mean stricture length was 2,6 (2.0-3.6) cm. Preoperative uroflowmetry showed mean Qmax 4,4 (3.2-9.6) ml/sec and PVR was 155 (75-380) ml. Postoperative mean Qmax at 1month was 18,4(14.6-21.8) ml/sec, p<0.001, at 6 months was 16,6 (9.8-18.2) ml/sec, p<0,003 and 12.7(7.4-17.3)ml/sec at 12 months, p<0,005. Accordingly, mean PVR was significantly improved at 32 (12-88) ml in 1 month, p<0.001, at 6 months was 34 (28-101) ml, p<0.005 and at 12 months was 62 (38-115) ml, p<0.005. Mean operative time was 32 (22-46) minutes and mean hospital stay was 2.8 (2-5) days. Complications included 2 urinary tract infections and 1 macroscopic haematuria. Eight patients (23%) had a recurrence in the first 9 months and treated with Amplatz renal dilatations alone.

Conclusions: The use of Amplatz renal dilators in combination with internal urethrotomy is a safe and effective alternative treatment option for the treatment of complex urethral strictures in patients unfit for reconstructive surgery.

UP.329

Direct Visual Internal Urethrotomy with versus without Sequential Dilatation in Urethral Stricture Long Term Outcome

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Introduction and Objective: Urethral stricture disease is still a major problem in men and direct visual internal urethrotomy DVIU followed by urethral dilatation is the frequently used as first line of treatment as easy procedure with good early results our Objective to evaluate early and late results of DVIU follwed by Urethra Dilatation UD or DVIU alone.

Materials and Methods: From April 2009 to May 2015 a total of 68 men presented with primary urethral stricture in Suez Canal University Hospital and Fakous Cancer Center were managed by DVIU followed by Sequential UD in group 1 GI alternatively with DVIU only in group 2 GII with analysis of patient demography, presentation, ascending urethrocystography AUCG, pre and post-operative IPSS, maximum flow rate (Qmax) on uroflowmetry (UF) and post-void residual urine (PVR). Follow- up to three years or untile failure of the procedure and urethroplasty done. Analysis of number of DVIU, length of pre-urethroplasty length of urethral stricture, complex of the procedure IPSS, (Qmax), (PVR) in each group.

Results: Out of 68 patients 64 completed the follow-up.The main age of patient 53.8 (28-75), 54.1 (27-74) year in GI, GII respectively.The median stricture length 0.92(7-1.6) ,0.88 (6-1.5) in GI,GII respectively, pre-operative IPSS score 28 (22-31), 29 (23-30) in GI, GII respectively, Qmax 6.0 (3-10), 7 (4-11) ml/sec in GI, GII respectively and PVR by ultrasonography 82 (40-280),79 (50-278) ml in GI,GII respectively without statistical difference in both group. The rate of DVIU 3.2,2.4 in GI, GII respectively after three year with highly statistically significant difference (p<0.001). Urethroplasty was done for 16 (50%), by graft in 12 (37.5%) and direct anastomosis in 4 (12.5%) in GI and 12 (37.5%) by direct anastomosis in 8 (25%) and 4 (12.5%) by graft in GII, the median length of urethral stricture in failed cases pre- urethroplasy assessment was 1.8 (1.4-3.5), 1.2 (.8-1.6) cm in GI, GII respectively. The median procedure time was 122 (90-185),168 (105-238) minutes in GI, GII respectively. The last follow-up assessment revealing improvement of in Qmax to 17.1 (11-23), 18.2 (12-24) ml/sec in GI, GII respectively,reduced PVR to 19.8 (12-56), 18.5 (11-60)ml, reduced IPSS to 8.2 (5-11), 7.8 (4-12) in GI , GII respectively.

Conclusion: The long term follow-up of DVIU with UD accompanied by more failure of the procedure with increased rate of failure and frequently need of urethroplasty for correction of long segment stricture in lengthy complexed operative procedure but our data in need for multi - centeric studies for consolidation of our results in the era of endoscopy.

UP.330

Surgical Management for Symptom Control of Male Genital Lymphoedema

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Introduction and Objective: Male genital lymphoedema can be severely debilitating. Alongside poor cosmesis, affected men suffer with recurrent infections, difficulty directing spray and chronic leakage of lymph. Compression garments and manual decongestive therapy is widely accepted as the mainstay of treatment, with surgery for symptom control an option when these measures fail. Here we present our experience with surgery for male genital lymphoedema at our specialist tertiary centre.

Materials and Methods: Fifty-eight patients over 11 years underwent surgery for management of their male genital lymphoedema. All were referred into a specialist multi-disciplinary service, consisting of a lymphovascular medicine physician, reconstructive urologist and support nursing team. We report their aetiology, intervention and outcome.

Results: Of 58 patients, 2 were excluded for inadequate information. Mean age at time of surgery was 38. Of 56 patients, 36 had congenital/primary lymphoedema. Of 20 remaining patients, 5 were secondary to Crohn's disease or hidradenitis suppurativa and 8 were idiopathic. 2 occurred as a result of pelvic surgery. 20 patients had mixed peno-scrotal lymphoedema, a further 21 had associated lower extremity involvement. 2 had isolated penile and 3 isolated scrotal lymphoedema. 9 patients had trunk and upper limb extremity involvement alongside peno-scrotal lymphoedema. Twenty-seven patients underwent penile reconstruction and scrotoplasty. 16 underwent scrotoplasty and 2 underwent penile reconstruction alone. Circumcisions were performed on 7 men with a further 2 undergoing hydrocelectomy. 2 had suprapubic tissue removed to release a buried penis. Long-term follow up is incomplete due to the wide geographical distribution of patients. All patients were seen at least once post operatively and discharged back to the care of their local lymphoedema service. Evidence suggests that at surgical follow up (between 2 and 6 weeks post operatively) most patients reported improvement in symptoms.

Conclusion: Our joint lymphoedema clinic, combining the expertise of both urologists and lymphoedema specialists offers suitable patients unique access to surgery for symptom control. This case series, the largest reported worldwide, proves that such surgeries do offer excellent cosmetic and functional results. Increased awareness of our service is vital to ensure that we offer affected men the best possible quality of life.

UP.331

Allium™ Bulbar Urethral Stent in the Management of Bulbar Urethral Strictures

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Introduction and Objective: We reviewed the outcomes of the use of the Allium™ bulbar urethral stent (BUS) in a small single surgeon series.

Materials and Methods: Between April 2014 and August 2016 a total of 15 urethral stents were placed into 13 patients. Mean patient age was 68 (range 27 to 88) at time of urethral stent insertion. The Allium™ BUS is a self-expandable metal stent designed for temporary placement. Data was collect retrospectively for each patient in regard to their demographic, stricture length, aetiology of stricture, previous surgeries and duration of stent insertion.

Results: The success of an Allium™ BUS placement was classified as after removal of stent a voiding flow test was recorded as 15 mL/sec or greater with no evidence of stricture on endoscopy or urethrogram. Bulbar urethral strictures treated had a mean length of 32 mm (range 10 to 60 mm). Urethral stent placement was successful in 8 out of 13 patients (62%) with mean follow up of 7.2 months (range 2 to 12 months). Two of the failed patients had repeat stenting with a successful outcome. Urethral stents were kept indwelling for a mean time of 4.3 months (range 1 day to 18 months) despite the intended indwelling time being 12 months as per Allium™ recommendations.

Conclusion: The Allium™ BUS may have a limited role in the in the management of bulbar urethral stricture disease. It is of particular interest in those patients with significant medical comorbidities excluding them from first line therapies such as urethroplasty.

UP.332

Urinary Function after Sex Reassignment Surgery

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Introduction and Objective: Sex reassignment surgeries (SRS) involve manipulation of the urethra and pelvic floor, being these patients at an increased risk of micturition disorders. In the post-operative period, sexual function is widely studied, but less in known about changes in urinary function. The aim of this study is to evaluate the urinary function of patients after SRS.

Materials and Methods: Retrospective analysis of 18 patients submitted to SRS, of which 7 female-to-male patients (F-M) underwent phalloplasties and 11 male-to-female (M-F) patients performed vaginoplasties, between September 2011 and December 2016, in a large academic centre. Five F-M and 10 M-F patients answered, by telephone, to a questionnaire designed by the authors in order to investigate the impact of surgery on urinary function.

Results: In the F-M group, with a median follow-up of 43.6 months, 1 patient urinates through a suprapubic catheter and 4 through the neophallus, of which all have good urinary stream and sensation of total bladder emptying. None have stress or urge-incontinence, but 2 patients have loss of drops through a urinary fistula and 3 complain about dribbling. All patients had temporary voiding dysfunction due to surgical corrections of fistula of the neourethra. After a median follow-up of 23.5 months, none of the patients in the M-F group have stress or urge-incontinence (1 patient had mixed urinary incontinence only in the first month). All have sensation of completely bladder emptying and good urinary stream (except 1). The most common complaint is anterior diverted stream (n=3) and de novo UTI's (n=3). Overall, 8 M-F and 4 F-M patients are satisfied the way they urinate.

Conclusion: Although most of the patients are satisfied the way they urinate, most of them had some degree of urinary dysfunction. They should be informed before surgery that SRS may cause temporary and/or permanent urinary symptoms that may lead to discomfort.

UP.333

The Role of Percutaneous Tibial Nerve Stimulation in Treatment of Men with Chronic Pelvic Pain

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Introduction and Objective: Chronic testicular pain / chronic prostatitis is a recognised condition which presents a challenge for urologists and pain specialists. It is a part of wider understood chronic pelvic pain syndrome (CPPS). It is often associated with sexual, emotional and psychological consequences for the patients. Neuromodulation is a recognized form of treatment as per 2016 EAU guidelines on Chronic Pelvic Pain. We have evaluated the efficacy of Percutaneous Tibial Nerve Stimulation (PTNS) in treatment of men diagnosed with with CPPS.

Materials and Methods: 18 male patients aged 25-80 (mean age 47.56 years) presented to our department with symptoms suggestive of chronic prostatitis ongoing for 1-20 years. No cause for their symptoms was found on imaging and/or cystoscopy and they did not improve on standard treatments (antibiotics, anticholinergics, alpha-blockers, analgesics and NSAIDs). They subsequently underwent treatment with PTNS (12x 30 min sessions in weekly intervals). Their pre- and post-treatment symptoms were assessed by means of NIH-Chronic Prostatitis Symptom Index (NIH-CPSI) which focuses on three domains: pain (21 points), urinary symptoms (10 points) and quality of life impact (12 points).

Results: Pre-treatment scores varied from 4-19 (mean 11.94) for pain, 0-10 (mean 4.39) for urinary symptoms and 3-12 (mean 8) for quality of life. After treatment, the Pain Score improved in 16/18 patients (Average improvement by 4.28 points, SD=3.93), Urinary Symptoms score improved in 13/18 patients (Average improvement 1.39 points, SD=2.21), Quality of Life Impact score improved 17/18 patients (Average improvement 3.67 points, SD=2.52). 10/18 of treated patients (vs. 1/18 before treatment) replied to the quality of life question that they would be delighted, pleased or satisfied if they symptoms were to continue for the rest of their life.

Conclusion: Although the evidence is still limited, PTNS appears to be an effective modality of treatment for men with CPPS. Further follow up for those patients is required to evaluate long-term efficacy and larger volume studies need to be undertaken but the results from this cohort are promising.

UP.334

About A New Case of a Seminal Vesicle Cyst: Endoscopic Approach

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Introduction and Objective: Seminal vesicle cyst associated with ipsilateral renal agenesis is a congenital malformation. The number of cases in the literature does not exceed 200cases. It was ZIENNER in 1914 who presented the first case. Through a literature review and a new observation, our objective is to determine the etiopathogenic, clinical and paraclinic characteristics of seminal vesicle cysts and to detail the modalities of endoscopic treatment in this type of cyst.

Materials and Methods: Mr T. A, 48 years old, consults for symptoms of low obstructive urinary tract associated with erectile dysfunction without ejaculation disorder neither haemospermian or post pain ejaculatory. The TR objectives a mass with smooth surface having a convex shape, an elastic consistency sometimes flaccid, sometimes stretched, masking the left lobe of the prostate; The right lobe is hardly palpable. On ultrasound, the left side of the prostate base is the site of a liquid multilocular formation developing on depends of the left vesiculo-deferential intersection with a moderate hypertrophy of the median prostate lobe.

Results: Uroscanner shows left renal agenesis with a spontaneously hyperdense left lateral-prostatic and retro-vesical formation, multiloculated, with irregular shape, measuring 56x65 mm, not enhancing after injection of contrast product, corresponding to the embryonic vestige of the vesiculo-deferential intersection. Prostatic MRI shows a dilatation of the seminal vesicule and dilated left ejaculatory channel with hypo signal T1, hyper signal T2. An alpha blocker treatment was ineffective. We opted then for transurethral surgery that consisted of cystoscopy and cervicoprostatic incision with transurethrale section of the prostatic base and the left lobe until the capsule. The postoperative was simple with disappearance of micturition disorders with an average follow-up of 19 months.

Conclusion: Seminal vesicle cyst associated with homolateral kidney agenesis is a rare entity. Its diagnosis is based on imaging. Trans-urethral endoscopic treatment can be considered as an alternative therapeutic.

UP.335

Accidental Glans Amputation during Circumcision (About 8 Cases)

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Introduction and Objective: In our climates, circumcision remains the most common intervention practiced to the boy. Among its complications, the most dangerous remains amputation of the glans, which compromises the sexual future of the child. The aim of our work is to analyze the clinical and therapeutic aspects to the glans amputation during circumcision.

Materials and Methods: This is a retrospective study carried out at the urology department of the CHU Habib Bourguiba de Sfax for the last 24 years.

Results: The average age of children is 6 years (3 to 8 years). The amputation of the glans was made during circumcision in 4 cases including two with complete section. In other cases, it is necrosis of the glans due to an electric arc during improper use of the electric scalpel. An urgent reconstruction of the glans was only possible in 3 cases. Only one case was noted of successful revascularization of the glans. The average time for consultation in the cases of necrosis of the glans was 3 days. The treatment consisted of a meatoplasty to obtain a satisfactory urethral meatus with skin repair in 1 case. After an average follow-up of 1 year, only one child had a quasi normal penis. For 6 children, the penis had a rather satisfactory appearance with a neo-meat permeable urethra. For the last child, the penis had a relatively shortened appearance.

Conclusion: Amputation of the glans is a severe circumcision complication. This intervention should be carried out in a specialized center by experimented surgeons.

UP.336

Clinical Outcomes of the Use of Collagenase Clostridium Histolyticum (CCH) for Peyronie's Disease (PD)

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Introduction and Objective: Peyronie's disease (PD) is an acquired, localized fibrotic disorder of the tunica albuginea. The initial, or acute, phase can present with penile pain upon erection and intercourse in 15–30% of cases, as well as progressive penile curvature. The chronic, or quiescent, phase denotes the end of inflammation and stabilization of the penile curvature or abnormality and usually occurs within 12–18 months following onset. Other associated features may include palpable penile plaques, hourglass defects, penile hinging, and penile shortening. In a scenario of absence of effective non-surgical treatments for Peyronie's disease; the appearance of Collagenase Clostridium Histolyticum is an alternative in patients without large deviations that do not want a more invasive attitude. To examine our experience on the efficacy and safety of CCH for PD patients.

Materials and Methods: Between June 2014 and February 2017, we evaluated and treated 59 patients with stable PD Curvature (predominately dorsal with palpable plaque) Our protocol consists of 3 month cycles it begins with a one CCH injections for the first 2 weeks giving a total dose of 1,8 mg, following by modeling under local anesthesia during the initial month, and two months of "Triple Therapy" - tadalafil 2,5-5mg daily, pentoxifylline 400mg twice a day and 6-8 hours of penile traction therapy.

Results: The cohort mean age was 52 (43-68) years with a mean curvature of 47º (30-70) degrees. During our mean follow up of 14 months, we noted significant clinical improvement in in PDQ bother scores from 6.5 to 4.2. Likewise, there was PDQ symptoms improvement from 8.8 to 5.9. There was a median of 2 cycles (1-4) per patient and 75% had positive responses after 2 cycles. The mean curvature reduction or degree improvement per cycle was 13º (9-19). Eight patients (13,6%) have required surgery for complete PD resolution. All side effects were mild, except two cases of plaque rupture, managed conservatively, with very good clinical outcome.

Conclusion: Using our modified-protocol combining CCH therapy, modeling and standard conservative therapy we achieved these promising preliminary results.

UP.337

Diagnostic and Therapeutic Profile of Paratesticular Rhabdomyosarcoma (About a Series of 6 Cases)

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Introduction and Objective: Rhabdomyosarcoma is a tumor developed at the expense of connective tissue. The para-testicular localization occupies the second place after the cervicocephalic localization. It occurs mainly in children and adolescents. The aim of thiswork is to study the clinical, para-clinical and therapeutic characteristics of this variety of rhabdomyosarcoma (PTR).

Materials and Methods: Our study is retrospective spread over a period of 26 years involving 6 observations of PTR. We have adopted the IRS (Intergroup Rhabdomyosarcoma Study) classification in staging and therapeutic management.

Results: The average age of our patients was 20 years (from10 to 35 years). The discovery circumstances were as follows: a progressive testicular volume increase in three cases, a large mass appeared after scrotal trauma in one case, inguinal mass in one case and cervical mass in another case. Clinical examination revealed a hard scrotal swelling in all cases, associated with inguinal lymph nodes in 2 cases and cervical adenopathy in 1 case. All patients had an orchidectomy. Histothological examination concluded to embryonic PTR (4 cases), polymorphic form (1 case) and a well differentiated PTR (1 case). The staging was negative in 2 cases and showed retroperitoneal ganglia (3 cases), mediastinal lymphnodes (1 case) and pulmonary metastases (1 case). The tumor was classified as stage IV (3 cases), I (2 cases) and II (1 cases). An adjuvant treatment was instituted, including poly-chemotherapy in 5 cases and radiotherapy in 1 case. We deplored three deaths with a decline of 3, 12 and 24 months. Two patients were alive after a follow-up of 75 and 66 months. One patient was lost of sight.

Conclusion: PTRs are rapidly evolving malignant tumors that affect young patients. The diagnosis is histological. The treatment combines surgery, chemotherapy and radiotherapy. Their prognosis remains dreadful despite the variety of available therapeutic means.

UP.338

Cafeteria-Style Diet Alters the Cytoarchitecture of the Penis in Adult Wistar Rats

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Introduction and Objective: Little has been discussed on the effects of chronic intake of a diet rich in sugars and lipids (cafeteria-style diet) in the penis. Therefore, we aimed to evaluate the effects of cafeteria – style diet intake on penile morphology of Wistar rats at 5 months-old.

Materials and Methods: Twenty male Wistar rats were divided into 2 groups from weaning (21 days): control (C; n=10) and cafeteria diet (CAF, n=10). Cafeteria diet was manipulated in our laboratory, having as constituents: commercial rat chow (60g/100g), condensed milk (25g/100g) and shortening (15g/100g), totaling 550 kcal/100g. The animals were feed with these diets until 5 months of life, when euthanasia has been performed. Biometric (food intake, body weight and blood pressure) and metabolic parameters (fasting glucose and oral glucose tolerance test) were evaluated in all animals. At euthanasia, the penis was removed for histomorphometrical analyzes.

Results: There were no differences in food intake, weight gain and blood glucose between the groups (p=0.0943). Epididymal (p=0.0095) and retroperitoneal (p=0.0036) fat deposits were more pronounced in the CAF group. Regarding penis morphology, both groups showed similar area of tunica albuginea, total area of the penis and area of the corpus cavernosum with or without tunica albuginea. Inversely, CAF group presented a reduction in the volumetric density of the smooth muscle cells (-19%, p=0.032) and sinusoids (-32%, p=0.006). Additionally, this group presented higher volumetric density of the connective tissue (+ 13%, p=0.006) when compared to controls.

Conclusions: The cafeteria-style diet intake, although did not modify the body mass, it promoted a redistribution of body fat and caused hypertension. Furthermore, it promoted penile morphological changes in the rat model.

UP.339

The Post- Puberty Cryptorchidism Diagnosis: About 258 Cases

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Introduction and Objective: Cryptorchidism is a frequent congenital anomaly, most often diagnosed and treated during childhood. However, its incidence remains frequent in adults and continues to have a problem of therapeutic attitude: should we keep the testicle by lowering or sacrificing it?

Materials and Methods: This is a retrospective 26-year study concerning 258 patients with cryptorchidism over 15 years of age.

Results: The average age of our patients was 24 years with extremes ranging from 16 to 63 years. The main circumstances of the discovery were: a systematic military recruitment in 48% of cases, a prenuptial investigation in 20% of cases and infertility reason in 17% of cases. The diagnosis of cryptorchidism was in all cases clinical. Cryptorchidism was unilateral in 87.7% of cases. The testicle was palpable in inguinal position in 75% of cases. Treatment consisted of a testicular lowering with orchidopexia in 80% of cases. The evolution was marked by fertility increase (12.5%), secondary testicular atrophy (2.5%), and subsequent carcinogenicity (1.16%).

Conclusion: Late testicular lowering may lead to an improvement in spermatogenesis and will allow easier monitoring in the search for a possible cancer. The best treatment is preventive by diagnosis and lowering testicular at an early age to prevent the two major pitfalls: infertility and cancer.

UP.340

Does T1- and Diffusion-Weighted MR Imaging Give Value-Added than Bone Scintigraphy in the Follow-Up of Vertebral Metastasis?

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Introduction and Objective: Even though bone scan is cost-effective to evaluate bony metastasis in patients with prostate cancer, it is less sensitive to detect early stage bony metastasis and to monitor the vertebral metastasis. Magnetic Resonance (MR) imaging is valuable test for detecting spine metastasis in lots of studies. We evaluated the effectiveness of limited MR (only T1 + diffusion weighted image, DWI) for

monitoring the vertebral metastasis in patients with prostate cancer.

Materials and Methods: From July 2014 to June 2016, the patients diagnosed spine metastasis by prostate cancer using the 99mTc bone scintigraphy were enrolled. Regardless of primary local therapy, visceral and lymph node metastasis, the changes of the spine metastasis were followed using the bone scan and bi-parametric MR (T1+DWI). Each test was followed more than 3 months. Clinical data including serum PSA level, related symptoms and sign, bone scan, and MR data were collected in total 10 patients (14 follow-up) prospectively. RECIST criteria was used for determining MR and bone scan finding.

Results: Among 14 follow-ups in 10 patients, 6 and 10 (including all progressed cases in bone scan) cases were determined as a progression disease using bone scan and bi-parametric MR, respectively (Table). Otherwise, neurologic symptoms and pain could be expected using the bi-parametric MR. Examination time for each test was 15 minutes and 4 hours for bi-parametric MR and bone scan, respectively. In Korean medical reimbursement system by government, the patients diagnosed with any cancer need to pay only $15.9 and $5.6 for limited MR and bone scan, respectively.

Conclusion: Bone scan has been most useful test for detecting and monitoring the bone metastasis in patients with prostate cancer. However, limited MR including T1 and DWI had additional benefit for monitoring the spine metastasis in the patients who already diagnosed spine metastasis. This limited MR is more sensitive for detecting progression disease. In addition, it could reduce neurologic complication by spine metastasis as well as the examination time. This pilot study need to collect additional data.

UP.341

Clinical Study of Prostatic Cancers with a PSA Level of More than 1000 Ng/Ml at the First Hospital Visit

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Introduction and Objective: We report the results of a clinical study of patients with prostatic cancer who had a PSA level of more than 1000 ng/ml at the first hospital visit.

Materials and Methods: Between January 2001 and December 2016, a total of 41 patients (PSA> 1000 ng/ml) were newly diagnosed prostatic cancer and treated with androgen deprivation therapy at our hospital.

Results: The PSA level ranged from 1025 ng/ml to 15450 ng/ml (median 2480 ng/ml). Most of the patients (90.2%) had symptoms due to prostatic cancer. A high Gleason score(≧8), T3-T4 category tumor and distant metastases (bone 34, extra-regional lymph node 19, lung 4, liver 1) were identified in 83.8%, 95.1% and 97.3% of the patients, respectively. The median follow-up period was 37.3 months (range 1-176.4 months). All the patients were treated with androgen deprivation therapy(ADT). Primary ADT consisted of combined androgen blockade(CAB) in 37 cases (90.2%), uncombined luteinizing hormone-releasing hormone (LHRH) agonist therapy in 1 cases (2.4%), and uncombined LHRH antagonist therapy in 3 cases (7.3%). Five-year PSA failure-free survival rate and 5-year overall survival rate were 30% and 50%, respectively.

UP.340, Table 1. Summary of Bone Scan and T1- And DW- MR Imaging in Study Cohort (N=14)

Patient	Age	GS	Primary diagnosis, mon/year	Previous therapy	ADT at exam	Follow-up duration, mon	PSA at exam	Clinical finding	Bone scan finding	MR finding	RECIST response Bone scan/MR
1-1	61	4+4	DEC/09	RP, RT, CH, ENZ	Yes, Ox	3	3.4	NSIC	NSIC	NSIC	SD/SD
1-2	61	4+4	DEC/09	RP, RT, CH, ENZ	Yes, Ox	3	9.0	Mild back pain onset	NSIC	Epidural and paravertebral extension, TL (10mm → 12mm)	SD/PD
1-3	62	4+4	DEC/09	RP, RT, CH, ENZ	Yes, Ox	3	12.1	NSIC	NSIC	NL	SD/PD
1-4	62	4+4	DEC/09	RP, RT, CH, ENZ	Yes, Ox	3	12.4	Severe back pain, L-spine operation	Postop change in L-spines	Postoperative change and remnant tumor at L-spine, Multiple NL at T-spine	SD/PD
1-5	62	4+4	DEC/09	RP, RT, CH, ENZ	Yes, Ox	3	121.5	Back pain aggravation, decreased motor tone of lower limb	Interval increased intensity and extent of uptake	Multiple NL at C,T, L, S- spine, both pelvic bone	PD/PD
2	60	4+5	SEP/15	ADT only	Yes	6	4.3	NSIC	NSIC	NSIC	SD/SD
3	76	5+4	DEC/14	RT, CH	Yes	3	14.1	Severe back pain onset	NSIC	Epidural and paravertebral extension, TL (3mm → 6mm)	SD/PD
4	48	4+5	APR/13	CH	Yes	6	302.9	Mild back pain onset, weakness of lower limb	NL	NL, extradural extension with spinal cord compression	PD/PD
5	72	4+3	SEP/14	RT	Yes	3	33.4	NSIC	NSIC	NSIC	SD/SD
6	66	4+4	NOV/11	RT, CH, ENZ	Yes	3	239.2	Aggravation of back pain	NL, increased intensity	TL (6mm → 8mm)	PD/PD
7	75	4+4	JUN/15	ADT only	Yes	8	0.1	NSIC	NL	TL (8mm → 10mm)	PD/PD
8	64	3+4	APR/15	ADT only	Yes	5	0.1	NSIC	NSIC	TL (4.5mm → 5mm)	SD/SD
9	73	4+5	MAR/15	ADT, CH	Yes, Ox	3	0.5	NSIC	Interval increased extent of uptake	TL (4mm → 5mm)	PD/PD
10	65	4+4	APR/12	ADT, CH, ENZ	Yes	3	72.2	NSIC	Interval increased intensity and extent of uptake	TL (18mm → 30mm), NL	PD/PD

GS; Gleason score, ADT; antiandrogen therapy, RP; radical prostatectomy, RT; radiation therapy, CH; chemotherapy, ENZ; enzalutamide, Ox; surgical castration, LNM: lymph node metastases

SD; stable disease, PD; progressive disease, NSIC; no significant interval change, NL; new lesion, TL; target lesion

Conclusion: When the serum PSA level is already above 1000 ng/ml, clinical study reveals T3-T4 tumor and the Gleason score is 8-10, then such a tumor is invariably metastatic. Although many patients had PSA failure and their prognosis was poor, long-term PSA failure-free survival was achieved in some patients. We need to ascertain the precise prognostic marker to ADT.

UP.342

Ratio Initial PSA and Pretreatmet PSA in CRPC Are Prognostic Factors in Patients with Castration-Resistant Prostate Cancer

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Introduction and Objective: Predictive factors of prognosis in pre or post-treated patients with abiraterone acetate (AA) and enzalutamide (ENZ) for castration-resistant prostate cancer (CRPC). Abiraterone acetate (AA) and enzalutamide (ENZ) are new generation hormonal agents (NHA) which demonstrated a survival gain in patients (pts) with castration-resistant prostate cancer (CRPC) pre-or post-treated with docetaxel. Although all patients eventually became resistant to these NHAs, some of them show primary resistance, defined as an early progression within the first 3 months, which leads to an early treatment interruption. In the present analysis, we have tried to identify which factor, if any, may predict primary resistance to AA and ENZ.

Materials and Methods: We evaluated a consecutive series of 52 pts, treated in our hospital: 14 received AA (1,000 mg po + prednisone 10 mg po daily) and 38 ENZ (160 mg po daily). For each pt we have recorded the pre- and post-NHA clinical history, the treatment details and outcomes. We have also assessed the ability of a series of 24 selected clinical factors to predict NHAs resistance, through a logistic regression analysis. Ratio initial PSA and pretreatmet PSA in CRPC is defined as cPSA-R. Continuous variables we are categorized by quartiles and chosen for the initial model after a univariate chi-square analysis.

Results: Among the 24 factors, the presence of ALP, Hb and visceral, cPSA-R 10% were predictive of prognosis at the univariate analysis. However, only cPSA-R 10% were confirmed at the multivariate analysis [exp (beta) 0.115; p = 0.007].

Conclusions: Our results suggest that ratio initial PSA and pretreatment PSA in CRPC are prognostic factors in patients with castration-resistant prostate cancer These data should be confirmed in a larger patient population.

UP.343

Factors Predicting Skeletal-Related Events in Patients with Bone Metastatic Castration-Resistant Prostate Cancer

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Introduction and Objective: Skeletal-related events (SREs) are common complications of bone metastatic castration-resistant prostate cancer (mCRPC). To the authors' knowledge, there are limited data regarding which factors predict SREs. We identified risk factors for SREs in men with bone mCRPC using characteristics commonly available in the medical record.

Materials and Methods: In all, 210 patients with prostate cancer awaiting initiation of androgen-deprivation therapy due to metastases were included. Among these men, 70 developed bone metastases during follow-up and represented the study. First occurrence of an SRE was abstracted from the medical records. A stepwise multivariable Cox model was used to select the strongest predictors of time to SRE. BSI was obtained using the BONENAVI version2® FUJI film 99m Tc-MDP

Results: The median age of the patients at the time of diagnosis of bone mCRPC was 75 years (interquartile range, 68-84 years). During follow-up (median, 7.8 months [interquartile range, 2.9-18.3 months]), 21 patients (30%) had an SRE. On univariable analysis, more recent year of metastasis (hazard ratio [HR], 0.91), prostate-specific antigen doubling time of ≥9 months versus <9 months (HR, 0.50), BSI >1, and bone pain (HR, 3.34) were all found to be associated with SRE risk. On multivariable analysis, year of metastasis (HR, 0.93), biopsy Gleason score of 7 versus ≤6 (HR, 1.74), radiotherapy as the primary localized treatment versus none (HR, 2.33), and bone pain (HR, 3.64), BSI(HR, 3.54) were associated with SRE risk. The area under the curve for a multivariable model based upon these risk factors was 0.744.

Conclusion: We identified several significant predictors of SREs among men with mCRPC. In particular, men with bone pain&BSI>1 are at high risk of an SRE. If confirmed, future trials should focus on prolonging life and reducing SRE risk in patients with mCRPC with bone pain.

UP.344

Prospective Study of a Switching GnRH Agonist Therapy in Castration Resistant Prostate Cancer in Japanese Patients

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Introduction and Objectives: Androgen-deprivation therapy (ADT) is an effective systemic therapy for advanced prostate cancer patients. Lawrentschuk et al described the retrospective study of the efficacy of the switch to another GnRH agonist in patients with PSA failure received the first GnRH agonist, and 69% of patients experienced decreased PSA level after 3 months of switching regimen (J Urol. 185, 2011). We conducted the prospective study on Japanese patients.

Materials and Methods: Prospectively, 16 patients from 5 different centers undergoing ADT and presenting consecutive rising PSA and despite a castrated testosterone level (<0.5 ng/ml) were registered. All patients received GnRH agonist 3-month depot (goserelin acetate (GA) or leuprolide acetate (LA)) mono-therapy. We measured the PSA and testosterone level variation 3 and 6 months after the switch.

Results: Of the total of 16 patients, 12 patients were switched from LA to GA and 4 patients were switched from GA to LA. The median PSA at the switch was 3.15 (0.93-13.30) ng/ml, and the median testosterone level was 0.17 (<0.03-0.27) ng/ml. At 3 months after the switch, the median PSA was 4.09 (1.79-17.77) ng/ml, the median testosterone level was 0.13 (<0.03-0.28) ng/ml and only 1 patient (6.3%) responded to the therapy. At 6 months after the switch, the median PSA was 5.19 (2.20-23.61) ng/ml, and the median testosterone level was 0.11 (<0.03-0.23) ng/ml and 3 patients (21.4%) responded to the therapy. In total, PSA decreased in 4 patients (25%), and the median duration of response was 6.5 months. All of the response cases were the LA to GA group, but there was not significant difference between the LA to GA group and the GA to LA group (p=0.182).

Conclusions: Our prospective study indicated the efficacy of androgen suppression was not different between LA and GA. Switching GnRH agonist therapy has a limited impact on PSA in castration resistant prostate cancer in Japanese patients.

UP.345

The Effect of Exogen Superoxide Dismutase on Inducing Apoptosis in Prostate Cancer Cell Lines Pc-3

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Introduction an Objective: This study aimed to assess the administration of exogen Superoxide Dismutase on increasing apoptosis through intrinsic pathway by looking the expression of MnSOD.

Materials and Methods: This study is an *in vitro* experimental study conducted with randomized design. Subjects in this study is prostate cancer cells of secondary Prostate cancer cell lines (PC-3) from the American Type Culture Collection (ATCC, Rockville, MD, USA). Subjects were divided into 5 groups: control, extract SOD 62.5 mg/ml, 83 mg/ml, 125 mg/ml and 250 mg/ml. Superoxide dismutase (SOD) is derived from extracts of melon seeds and wheat gliadin biopolymer. Expression of prostate cell PC-3 in each group was determined with imunocytochemistry and the expression of MnSOD was determined by Elisa test and Apoptosis cell with TUNEL. The percentage of TUNEL was determined by counting 10 random fields per section. All values were expressed as means ± SE. Statistical differences between each group were determined by a χ2-test. In other studies, one-way ANOVA was used, followed by LSD test if there were significant differences between groups. Significance was indicated if $p < 0.05$.

Results: Statistical analysis showed that SOD extract increasing the expression MnSOD in each group especially in 125 and 250 mg/ml group (p = 0.000). The percentage of TUNEL for apoptotic cells also increasing maximum in 125 and 250 mg/ml group (p = 0.000). with LSD test, there is significantly differences in incresing apoptotic cell in 62,5 and 83 mg/ml groups (p<0,05) but there are no differences between 125 and 250 mg/ml (p>0,05).

Conclusion: Exogen SOD induced apoptotic in Prostate Cancer Line PC-3 through increased expression of MnSOD in intrinsic pathway.

UP.346

The Clinical Impact of Concurrent Androgen Deprivation Therapy during Docetaxel Chemotherapy for Castration-Resistant Prostate Cancer Patients

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Introduction and Objective: To compare the oncologic results of docetaxel chemotherapy in castration-resistant prostate cancer (CRPC) patients according the continuous addition of androgen deprivation therapy (ADT) during chemotherapy.

Materials and Methods: We reviewed the medical records of 106 patients who received docetaxel chemotherapy from 6 medical institutes, retrospectively. Among them, we found 72 patients who had a complete medical record; 28 patients with ADT (ADT group) and 44 patients without ADT (no-ADT group). We compared the progression-free survival after docetaxel chemotherapy and 2nd line hormone therapy.

Results: Docetaxel chemotherapy was administered in average 28 months after first treatment including primary ADT. Median number of 6 cycles of docetaxel chemotherapy were done in both group. In ADT group, orchiectomy was performed in 18 patients and LHRH agonist was injected in 10 patients. During docetaxel chemotherapy, PSA progression-free survival was statistically different (6.0 ±4.75 months in ADT group versus 4.8 ±3.2months in no-ADT group, p=0.024). However, radiologic progression-free survival was not statistically different (5.0 ±3.12 months in ADT group vs 5.0 ±2.79 months in no-ADT group, p=0.387).

Conclusion: In our cohort, a continuous addition of ADT showed the significant benefit in PSA progression-free survival during the docetaxel chemotherapy in CRPC patients. Further prospective studies are needed to confirm the present observations.

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Prostate Cancer: A Rare Entity

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Introduction and Objective: Small cell prostate cancer (SCCp) is an aggressive and rare entity, frequently associated with prostate adenocarcinoma (CaP) (40-50%). It shares histological features with lung SCC (SCCl) and presents as an extensive local disease, visceral disease, low PSA levels despite the advanced metastatic disease, rapid progression and unresponsiveness to hormonal blockade (HT). The average time of SCCp development in patients with CaP history is about 18-25 months. The staging is similar to CaP and the evolution implies a regular follow-up by thoracoabdominal-pelvic CT / MRI and bone scintigraphy. SCCp is treated the same way SCCl does. They are both chemosensitive with dim prognosis due to their aggressiveness.

Materials and Methods: A 39 years old patient with acinar CaP G6 (3 + 3) cT2c NxMx, IPSS 3, PSA 6.19, prostatic volume of 24g, Qmax 17ml/s, submitted to I125 low dose Brachytherapy (BT)+Radiotherapy (RT) in 2003. He didn´t do HT. Regular semianually follow-up was done, with PSA nadir of 0.77 ng/ml, 5 years after BT (2009). According to Phoenix criteria, the biochemical failure (PSA 2.77 ng/ml) was declared in August 2014. In May 2014, the patient reported the appearance of several hard, firm and painless penile nodes (0.5 cm in diameter). In September 2014 biopsies of these nodules and of the prostate were made, which showed the same histological result in both: SCCp with penile metastization. A prostatic G8 (4 + 4) focus was also identified at prostate level. CT and Bone Scintigraphy showed multiple scattered adenopathies, hepatic, pulmonary and axial skeletal metastases. In October 2014, he started QT and 3 months later he developed an urethro-rectal fistula.

Results: The patient died in March 2015 at 52 years old.

Conclusion: SCCp is a rare and aggressive subtype of prostate carcinoma. It doesn´t usually respond to HT and the progression of the disease is not associated with PSA increases. As SCCl, SCCp is chemosensitive. However, given its rarity, a specific treatment is not standardized. The current published results come from small retrospective series, that show an average survival of about 9 months after starting QT.

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Does Response to Initial Androgen Receptor Axis-Targeted Agents (ARAT) Predict Combined Progression-Free Survival (PFS) in Patients with Castration-Resistant Prostate Cancer (CRPC)?

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Introduction and Objective: Radical pharmacotherapy remains yet to be established for castration-resistant prostate cancer (CRPC) and an array of clinical issues remain to be resolved, which include sequence of drug use and cross-resistance. Indeed, at present, no clear guidelines are available for sequential use of novel agents in CRPC, particularly enzalutamide and abiraterone, of all androgen receptor axis-targeted (ARAT) agents, and no evidence is available to support their differential/sequential use.

Materials and Methods: This study included a total of 69 patients with CRPC receiving both enzalutamide and abiraterone for retrospective analysis. Patients were treated with sequential therapy using enzalutamide followed by abiraterone or vice versa and compared for combined progression-free survival (PFS) (PFS-1 + PFS-2), where PFS-1 and PFS-2 represented clinical or radiographic PFS with the first drug and the second drug used in sequential therapy, respectively. Patients were also compared by sequential drug use for combined prostate-specific antigen (PSA)-PFS, PSA-overall survival (OS) and PSA response.

Results: Of the 69 patients investigated, 46 received enzalutamide followed by abiraterone (E-A group) and 23 received abiraterone followed by enzalutamide (A-E group). The two groups were not significantly different with regard to their background except their hemoglobin (Hb) values. The A-E group was shown to be associated with superior combined PFS compared to the E-A group (HR, 0.12; 95% CI, 0.26-0.54; P = 0.006). Similar results have been shown for combined PSA-PFS, while OS was not significantly different between the groups. Furthermore, multivariate analysis of combined PFS identified response to the first ARAT agent used as contributing to significant differences between the two groups.

Conclusions: Study findings suggest the superiority of the A-E sequence to the E-A sequence with respect to combined PFS, PSA-PFS in patients with CRPC. The study also suggested that response to the first ARAT in sequential therapy may predict combined PFS in these patients.

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Results of Treatment with Abirateron Acetate in Japanese Castration Resistant Prostate Cancer Patients: Determining a Prognostic Factor of Long Term Response

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Introduction and Objective: Abirateron Acetate (AA) is now a standard treatment for castration resistant prostate cancer patients (CRPC), due to longer progression free survival. However, whether AA has the same efficacy despite race is unknown. The aim of this study is to assess the real-world efficacy of AA in Japanese men, and to evaluate the factors of long term response to AA.

Materials and Methods: A total of 163 patients who were treated with AA in a single prefecture in Japan were retrospectively enrolled. Patient's backgrounds were assessed. We determined patients who were treated with AA longer than 6 months long term responders, and evaluated the difference of responders and non-responders. We also evaluated PSA change rate at 3 months after AA treatment started, and evaluated whether PSA change rate at 3 months can prognose the progression free survival rate with AA treatment.

Results: Mean PSA at diagnosis was 90 (0.96-11570). Mean age at starting AA was 77 (55-92). Mean PSA when starting AA was 18.42 (0.101-4028.07). Sixty-five percent of the patients had metastasis. Ten patients showed grade 3 side effects and 16 patients had to change treatment due to side effects. Evaluation of treatment duration and patient characteristics are shown in Table 1. Lower serum ALP level and PSA when starting AA showed a longer treatment duration. Comparison of responders and non-responders are showed that the number of former treatment was the strongest factor for responders. When compared by PSA change rate at 3 months, patients who decreased 50% and patients who increased 30% showed a significant difference.

Conclusion: Good patient conditions and short former treatment was a factor of long duration with AA. PSA change rate at 3 months may be a good factor to prognose progression.

UP.349, Table 1.

	positive	negative	p value
Presence of matastasis	5.288	5.7	0.3074
Bone metastasis	5.925	5.209	0.174
Lynph node metastasis	5.106	6.031	0.1174
Patient characteristics at starting AA	**higher**	**lower**	
Hb 12.5 g/dl	5.095	6.205	0.0727
LDH 220 IU/l	5.421	5.839	0.2909
ALP 370 IU/l	3.326	6.628	0.0126
N/L ratio 2.5	6.709	4.68	0.0644
Gleason score 8	5.567	7.785	0.0514
PSA 20 ng/ml	4.1	7.121	0.0042
Presence of former treatment	**positive**	**negative**	
Flutamide	5.654	5.4	0.3763
Estramustime	5.575	5.5625	0.4931
Etinilestradiol	5.796	5.0408	0.1815
Corticosteroid	6.265	4.9036	0.0366
Docetaxel	6.273	4.2321	0.0051
Enzalutamide	6.554	4.2714	0.0013

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Long-Term Outcome of Surgical and Medical Hormonal Castration in Asian Men with Advanced and Metastatic Prostate Cancer

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Introduction and Objective: To compare the efficacy and adverse effects of surgical or medical hormonal castration on advanced and metastatic Asian prostate cancer after at least 5-years following initial treatment.

Materials and Methods: We retrospectively reviewed 159 patients with advanced or metastatic prostate carcinoma who underwent either surgical or medical castration as the initial treatment in our hospital between July 1999 and July 2011. Those receiving hormonal injection therapy and bilateral orchidectomy were analysed on the effectiveness of castration, time to nadir PSA, time to castrate-resistance status, time to skeletal-related events and adverse outcomes of treatment such as osteoporosis and cardiovascular-related events. Statistical analyses were performed using STATA 13 (StataCorp, College Station, TX). Numerical and categorical variables were assessed using Student's t-test, Mann Whitney U test, Chi-square or Fisher's exact when appropriate. A two-tailed significance level of 0.05 was used for all tests.

Results: Among 108 patients with medical hormonal treatment and 51 patients who underwent bilateral orchidectomy, there was no significant difference between their baseline characteristics in terms of age, race, Charlson comorbidity index score and baseline PSA at initial disease presentation. Time to reach nadir-PSA was 7.5 months after initiation of medical hormonal therapy and 6.8 months after bilateral orchidectomy (p=0.077). Median time to reach castrate-resistance was 12.1 months in medical therapy group and 17.6 months in surgical group (p=0.087). There is no evidence to suggest that either medical or surgical castration affects the risk of cardiovascular events (p >0.999) or skeletal events (p=0.556). Surgical castration showed increased 1-year and 2-year survival respectively (100% vs 83.3% and 78.4% vs 59.3%, p<0.05). However, the longer 5-year survival was similar at 32.4% for medical castration and 41.2% in surgical castration (p=0.28). Both medical and surgical castration groups showed similar cardiovascular complications and skeletal-related events.

Conclusion: Medical and surgical hormonal castration showed similar long-term efficacy and complications in treatment of advanced and metastatic prostate cancer, although bilateral orchidectomy showed increased 1-year and 2-year survival in the shorter term.

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Efficacy of Early Administration of Zoledronic Acid in Hormone-Sensitive Prostate Cancer Patients with Bone Metastasis

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Introduction and Objective: To ascertain the effect of zoledronic acid treatment on clinical outcomes in patients with bone metastatic prostate cancer, we compare time to first skeletal-related events (SREs) and overall survival (OS) of early administration of zoledronic acid in men with hormone-sensitive disease versus standard zoledronic acid administration initiated after progression to castration-resistant disease.

Materials and Methods: The present study consisted of 70 patients who were treated with zoledronic acid for bone metastases of prostate cancer at our hospital between 2006 and 2014. Time to first SREs and OS time of these patients treated with zoledronic acid was retrospectively evaluated. The Kaplan-Meier method was used to estimate time to first SREs and OS time. The difference in time to first SREs and OS time between two groups was analyzed using the log-rank test.

Results: The median patient age and PSA level was 71.0 years (range 51-85) and 94.3 ng/ml (range 0.01-3877). 49 patients (71%) had Gleason score 8 to 10. Zoledronic acid was used to treat 36 patients (51%) with hormone-sensitive metastatic prostate cancer and 34 patients (49%) with castration-resistant metastatic prostate cancer. Of the 70 patients, 39 patients (56%) experienced at least one of the SREs. The median time to first SREs was not reached in hormone-sensitive disease patients and 34.0 months in castration-resistant disease patients (p<0.001). The median OS time was not reached in hormone-sensitive disease patients and 43.3 months in castration-resistant disease patients (p=0.014).

Conclusion: In men with hormone-sensitive prostate cancer with bone metastasis, early administration of zoledronic acid was associated with lower risk for SREs and survival improvement.

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Hook-Wire Localisation of Pelvic Metastatic Prostate Cancer: Nodal in a Haystack

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Introduction and Objectives: In the ongoing monitoring of patients following definitive treatment for prostate cancer, it is not uncommon for patients to have biochemical recurrence (BCR). Prostate Specific Membrane Antigen (PSMA) Positron Emission Tomography/Computed Tomography (PET/CT) is increasingly being utilised for the diagnosis of loco-regional and metastatic prostate cancer due to its increased specificity compared to conventional imaging. Matching of surgical anatomy to PSMA PET positive nodes on imaging can pose a challenge to localisation of disease for resection. We describe a novel approach using pre-operative hook-wire localisation of PSMA-PET positive nodal tissue to improve localisation of target nodes.

Materials and Methods: A patient who had previously undergone robot-assisted laparoscopic prostatectomy and radiation therapy to the prostate bed was investigated for BCR with PSMA-PET/CT. This displayed 2 PSMA-avid nodes in the left pelvis only and the patient was planned to undergo salvage lymph node dissection. Given the difficult position of one of the target nodes (postero-lateral pelvic wall in close proximity to rectum) pre-operative CT and PSMA-PET/CT images were used to place a hook-wire into the affected target nodal tissue.

Results: The patient underwent a successful lymph node dissection. Intra-operative localization of the

affected nodal tissue was reported by the operator to be much improved with the specimen and hook wire easily able to be palpated and removed. Histopathology revealed both sites found to be avid on PSMA scanning to yield metastatic prostate cancer. The patient is currently being and will continue to be followed up with serial prostate specific antigen measurements.

Conclusions: The use of PSMA-PET/CT has increased exponentially since its introduction. The clinical utility of the specific localization of target nodes has been shown in relation to diagnosis but has so far been limited to descriptive information for surgeons to use intra-operatively. The use of physical localization of target tissues with hook-wires allows us to further improve our accuracy in node dissection and increase the yield of resected tissues. This novel approach is likely to be refined with ongoing use but had significant potential to improve surgical outcomes for patients, especially those with difficult access to nodal tissue.

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Abiraterone in Metastatic Castration-Resistant Prostate Cancer

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Introduction and Objective: Abiraterone is an irreversible inhibitor of cytochrome P450 A-17. It is not known exactly how to select the best sequence of treatment to perform in metastatic castration-resistant prostate cancer (mCRPC). The objective is to analyze the results of abiraterone in mCRPC in a context of pre and post-docetaxel.

Materials and Methods: Retrospective study of 42 patients treated in our department until February 2017. The patient's characteristics, the initial disease and its course, the clinical, analytical, imaging, therapeutic findings and drug safety were described. IBM SPSS Statistics 22 was used: chi-square, independent sample t-test, ANOVA and Kaplan Meier tests were done (p value 0.05).

Results: At initial diagnosis of prostate cancer, the mean age was 64.9 ± 6.4 years, the PSA was 67.6 ng/mL with a Gleason score of 8 in 41.7%. Metastasis was observed at the beginning in 21 patients (50%). M0 patients were mainly submitted to radical prostatectomy (75%), developing metastasis after 41.3 ± 57.7 months. After establishing castration resistance state, 71.4% (n=30) received abiraterone at the beginning (group 1) and 28.6% (N=12) did so only after docetaxel (group 2). Median PSAs in group 1 and 2 were 107.9 and 202.4 ng/ml (p: 0.5). The mean times of treatment with abiraterone in the group 1 and 2 were 10.2 months and 13.8 months (p = 0.4). The discontinuation rate was 57.1% (group 1) and 26.2% (group 2) mainly caused by death. There were no severe adverse effects. There was a reduction in the PSA value after initiation of abiraterone especially at the end of the third month (59.9%). Patients of group 1 came less to the Emergency Department (4 vs 9, p: 0.02). Mean overall survival after mCRPC was 37 months: 19 months for group 1 and 58 months for group 2 (p:0.02). For a mean overall follow-up time of 7 ± 5.5 years, the mean survival from the beginning of abiraterone was 16 months and 10 months for group 1 and 2 (p: 0.9).

Conclusion: Abiraterone is a valid alternative in mCRPC: in our series, abiraterone after docetaxel could be the better sequence to take.

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Locally Advanced or Metastatic Prostate Cancer and the Quality of Life in these Patients

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Introduction and Objective: In this study we assessed the health-related quality of life of the patients who had locally advanced and metastatic prostate cancer. It will help in guiding both the physician and the patients about the social, emotional and physical challenges a patient can face in such state of disease. It will help in counseling the newly diagnosed patients.

Materials and Methods: Total of 82 out of 406 prostate cancer patients were included in the study. We collected the data regarding patients on proforma. For quality of life we used PROSQoLI and SF-12 forms.

Results: These 82 patients had either locally advanced or metastatic disease. The mean age was 67.3±9.4 years. Out of the 82 patients 61% had locally advanced cancer while 39% had metastatic presentation of the disease. Frequency and nocturia were common presentations (58%). Body aces and fatigue was also seen in 67% of patients. Insomnia was seen in 9.7% patients. Fatigue and anxiety were leading to the poor quality of life in most of the studied patients. The PSA measurements after the treatments were taken as improvement or worsening of disease by the patients (literate ones) and had great impact on their anxiety level. Sexual life was of decreased quality but the relationship in marital life was of supportive nature by the life mats of the patients. In 14.6% of the couples the wives were more anxious as compared to the men. Social life and physical scores were decreased in the initial 5 months of the disease. More than 60% of patients well adapted to their office and social life in first 5 months of the disease.

Conclusion: The quality of life of the patients with locally advanced and metastatic disease is affected in the domains of physical, sexual, emotional and social parameters. Further studies needed to how effectively make strategies for improving quality life on multidimensional /multidisciplinary levels.

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Update on Management of Patients with Metastastic Castration Resistant Prostate Cancer in a County Hospital

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Introduction and Objective: Management of patients with metastatic castration resistant prostate cancer (mRPCa) has evolved significantly in the last years, providing a new challenge in urological practice especially in centers such as County Hospitals. We try to evaluate treatment of mRPC in our environment.

Materials and Methods: Retrospective study of a consecutive series of patients with mRPCa from April 2010 to January 2017 being treated with therapies directed to the androgen receptor. We analyzed the variables: age, Gleason, PSA at diagnosis, comorbidities, time from diagnosis of prostate cancer to diagnosis of MRPC, treatment protocols, use of analgesia, adverse effects, progression-free survival (PFS) and overall survival (OS). Statistical analysis was performed with the SPSSv.22 program, making a descriptive analysis of variables studied and calculating PFS, OS using Kaplan-Meier curves.

Results: We included 48 patients with a mean age of 76.85 years (SD 8.13), the median PSA at diagnosis was 30.75 ng / ml (3-3500), the median follow-up was 15 months (1-79). The median time between diagnosis of cancer and resistance to castration was 36 months (5-199). A total of 64.8% of patients started treatment with therapies directed to the androgen-receptor as first-line and 35.42% as second line. The median PFS was 6.5 months (5.36-7.64) and OS were 16 months (3-79).

Conclusion: This study shows that in our experience in the use of therapies directed to the androgen receptor are an effective and well tolerated treatment in mRPCa regardless of the therapeutic protocol used.

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Should Be Considered the Age as a Limiting Factor for the Treatment of Metastatsic Castration Resistant Prostate Cancer with Therapies Directed to the Androgenic Receptor?

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Introduction and Objective: In last decades there has been a significant increase in life expectancy in our countries as well as in the age of diagnosis of prostate cancer (PCa). However, several studies show an under-treatment of this group of patients.

Materials and Methods: A retrospective study of a consecutive series of patients with mRPCa from April 2010 to January 2017, subdividing the population into 2 groups according to age (<75 vs> 75 years); Gleason, PSA at diagnosis, TNM, comorbidities, time from diagnosis of prostate cancer to diagnosis of mRPCa, treatment protocol, use of analgesia, adverse effects, progression-free survival (PFS), cancer-specific survival (CSS). Statistical analysis was performed with the SPSSv.22 program, performing a univariate analysis to study the statistical association and the Kaplan-Meier survival curves of the general population and the comparison between both groups.

Results: A total of 48 patients were included, of which 15 (31.25%) were younger than 75 years and 33 (68.75%) were older than 75 years. The characteristics of the sample were comparable for Gleason, TNM, PSA to mRPCa, PSA velocity, PSA doubling time, Charlson index, Karnofsky, BPI, adverse effects. Significant differences were found regarding metastases at initial diagnosis of PCa and treatment protocol. No statistically significant differences were found between the two groups in PFS or CSS.

Conclusion: Given the results of our study, we can conclude that age should not be considered an exclu-

sive factor for treating mRPCa with therapies directed to the androgen receptor.

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Experience in Treatment of Metastasic Resistance Prostate Cancer in Enderly Patients

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Introduction and Objective: Treatment of advanced stages of prostate cancer (PCa) in elderly patients has been increasing in the last decades due to the increase in life expectancy as well as diagnosis of PCa at later ages. Since the appearance of drugs such as androgen receptor inhibitors, the treatment of metastatic disease has ceased to suppose the end of following-up these patients. We present the experience of our center in the management of these molecules in elderly patients.

Materials and Methods: Retrospective study of a consecutive series of patients older than 75 years with metastatic Castration Resistant Prostate Cancer (mRPCa) from April 2010 to January 2017 treated with androgen receptor therapies treatment (ARTT). We analyzed the variables age, Gleason, PSA at diagnosis, comorbidities, time from diagnosis of prostate cancer to diagnosis of mRPCa, treatment protocol, use of analgesia, adverse effects, and progression-free survival (PFS). Statistical analysis was performed with the SPSSv.22 program, making a descriptive analysis of the variables studied by calculating PFS and CSS using Kaplan-Meier curves.

Results: Was analyzed a sample of 33 patients, with a mean age of 81 years (SD 6.20). PSA at diagnosis of 41.1 ng / ml (3-2750), most prevalent Gleason score was 7 (4 + 3) (29%). Eighteen patients received abiraterone and 7 enzalutamide as first line treatment, 7 received second line abiraterone and 1 received third line. 59%Fifty nine percent PFS 7.17 months (range 6.61-8.2), CSS 23 months (range 12.19-30.74). There were no statistically significant differences in PFS as CSS as a function of the therapeutic protocol.

Conclusion: We can conclude that treatment with therapies directed to the androgen receptor had proven to be an effective and well tolerated treatment in elderly patients.

UP.358

Expression of Stromal Elements of Prostatic Adenocarcinoma in Different Gleason Grades

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Introduction and Objectives: We aimed to quantify the expression of stromal elements in different Gleason grades in prostatic adenocarcinoma and compare with prostatic non-neoplastic tissue.

Materials and Methods: The materials were obtained from samples of prostate peripheral zone. A total of 133 specimens, taken from open radical prostatectomies, were used. The patients' mean age was 63 years-old (45 to 82). We compared the tumor area with the non-tumor area of the same patient. The samples studied were separated into three groups according to the Gleason grade: Gleason 4 to 6 (n=45), Gleason 7 (n=64) and Gleason 8 to 10 (n=24). The Gleason 7 group was subdivided into two subgroups: 3 + 4 and 4 + 3. We analyzed the following elements of the extracellular matrix: collagen fibers, elastic system, smooth muscle fibers, blood vessels, and nerves. The tumor area and non-tumor area of the TMA (tissue microarray) were photographed. The images were analyzed using the ImageJ software (NIH, USA).

Results: The comparison between the tumor and non-tumor area of the same patient, showed significant differences between the prostatic stromal elements. It was observed an increase of collagen fibers and elastic system fibers in the tumor area when compared to the non-tumor area, and this increase was most significant for Gleason 7. In relation to the blood vessels, their density is significantly increased in the tumor area in all Gleason grades groups analyzed. The smooth muscle fibers exhibited different behavior, with a decrease in relation to the tumor area, with statistical difference in all Gleason groups analyzed.

Conclusion: This study showed that there is a significant difference between the extracellular matrix in prostate cancer, when compared to the non-tumor area. Also, our data showed that important modifications of prostatic stromal elements strongly correlated with different Gleason grades and can contribute to predict the pathological staging.

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The Role of MRI-TRUS Fusion Biopsy in Diagnosis of Prostate Cancer: A Prospective Cohort Study

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Introduction and Objectives: TRUS guided 12 core biopsy of prostate, the current standard, has a sensitivity of 39-52% in diagnosing prostate cancer. Fusion biopsies based on multiparametric MRI images followed by TRUS guidance increase accuracy of biopsies and may improve their yield. We prospectively evaluated the diagnostic yield of fusion biopsies in a cohort of men with suspicion of prostate cancer.

Materials and Methods: In an IRB approved prospective cohort study, 100 men with suspicion of prostate cancer were recruited to undergo an MRI-TRUS fusion biopsy using the Artemis(R) (Eigen, USA) device. All patients underwent standard 12 core systematic biopsies in addition to biopsies targeted at the MRI identified (PIRADS 3-5 score) abnormal regions. Yield from standard cores was compared with targeted cores. Gleason scores of 4+3 or higher were considered significant.

Results: The mean age of the patients was 64.06 ± 8.68 years and the mean PSA was 9.63 ± 5.22ng/mL. Twenty five patients had cancer of which 2 (8%) were detected only on standard cores and 2 (8%) only on targeted cores. Of the clinically significant cancers, targeted biopsy detected a higher number (21/23, 93%) than standard biopsy (16/23, 69%). Five of 7 (71%) cancers that were insignificant on standard biopsy were upgraded to significant cancer on targeted cores.

Conclusions: Eight percent cancers were detected only on MRI-TRUS fusion targeted biopsies while it upgraded more than two-thirds of insignificant cancers to significant cancers. Fusion biopsies thus provide incremental information over standard TRUS biopsies in the diagnosis of significant prostate cancer.

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Statistical Results of Monitoring Residents of Saint-Petersburg for Prostate Cancer

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Introduction and Objective: Prostate cancer (CaP) ranks high place among socially significant diseases, refers to the neoplasm with dynamically growing temp in Europe and in Russia. CaP play important role among socially-significant diseases. Last years in St. Petersburg (SPb) were verified the increase of CaP incidence. The aim of our study was to analyse the statistics of that pathology for SPb's inhabitants during 2004-2013.

Materials and Methods: We analyzed medical and statistical indicators of CaP in St. Petersburg (SPb) in 2004-2013 based on data from the official registration forms.

Results: The absolute number of newly and death CaP cases increased in 51.2% and 24.7%/100 thous., resp., with the peak of incidence in men older 60 y. CaP held 8th ranking place of incidence (5.4%) and 9th – of mortality (4.5%) in SPb (2013). The ratio of dead/diseased CaP (in Europe 85.7%) in SPb was 55.1% and the number of death cases increased by 23.9%, which indicates the need to improve the diagnostic. The number of CaP cases in early stages increased from 4.6 to 11.2/100 thous, similar to situation in Russia. CaP stage IV decreased on 85 pts/year, far ahead from country rates. To assess the premature mortality rate we used the index - the "Lost Years of Potential Life". The number of CaP pts who lived less than 70 y. (2011-2012), increased in 60-64 y. and in 45-49 y.y.: the elderly and the working-aged men. That greatly helped to evaluate the effect of healthcare measures.

Conclusions: We need to improve the quality of statistical monitoring for neoplasm with ICD-10, continue building the knowledge base for urologists, improve the medical care for CaP patients, select clinical trials with new drugs, perform epidemiological studies for prevention of new CaP at the city with significant group of elderly people.

UP.361

Robotic Radical Prostatectomy and High Risk Disease: Is PSA a Marker of Nodal Disease, Positive Margin Status or Biochemical Recurrence?

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Introduction and Objective: Oncological outcomes are key to a successful operation. Prognostic factors tend to include operative PSA, margin status, lymph node involvement and biochemical recurrence. Is pre-operative PSA predictive of these factors in high risk disease?

Materials and Methods: A prospective database of 707 chronological RARPs (single centre, single surgeon) was reviewed for high risk disease, pre-operative PSA, positive margin status, lymph node positivity and biochemical recurrence.

Results: Of 707 cases, 124 were high risk disease. This is the study cohort. Mean age 63.0 (50-73). Mean follow-up 5 years. Gleason <3+4 59 cases, Gleason >4+3 65 cases. PSA preoperatively: 0-10 ng/ml: 71/124 cases, 20 positive margins (T3a/T3b) (lymph node positivity six cases, two with positive margins), biochemical recurrence requiring treatment 1 cases. PSA preoperatively: >10-20 ng/ml: 41/124 cases, 18 positive margins (T3b) (six cases, lymph node positivity, 3 cases margins positive), biochemical recurrence requiring treatment in cases. PSA preoperatively: >20 ng/ml: 12/124 cases, 8 positive margins (T3b) (two cases lymph node positive, one with positive margin), biochemical recurrence requiring treatment in 3 cases. The overall biochemical free recurrence rate (PSA <0.05 ng/ml) was 94.4%.

Conclusions: Pre operative PSA is an indicator of biochemical recurrence post operatively. There is no association between PSA and margin status or lymph node positivity.

UP.362

EPCA2.22: A Silver Lining for Early Diagnosis of Prostate Cancer

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Introduction and Objective: To investigate whether EPCA-2 (a prostate matrix nuclear protein) can be a more helpful marker in prostate cancer diagnosis.

Materials and Methods: One hundred and seventy six patients enrolled in this study had abnormal prostate specific antigen (PSA) or digital rectal examination and were candidates for prostate needle biopsy. Blood samples were obtained from each patient prior to biopsy and the samples were frozen for EPCA-2 measurement. Patients diagnosed with cancer were assigned to the case group and those with benign prostate hyperplasia (BPH) were included in the control group. Univariate and multivariable analyses were done to assess the relationship between different independent variables with cancer diagnosis. The diagnostic power of EPCA-2 for cancer was estimated at different levels of PSA according to the ROC curve.

Results: The mean (± SD) age of cancer cases was 70.33 (± 9.02) years while it was 63.34 (± 9.47) years for BPH cases (P < .01). EPCA-2 and PSA were also significantly different between cancer and BPH cases (P < .001). The multivariable logistic regression showed that EPCA-2 has a significant relationship with cancer diagnosis (OR=1.009, *P* = .021). After controlling other variables following stratification for PSA, it was shown that EPCA-2 and cancer were correlated just when PSA was >10 (P < .001). AUC was 0.694 for cancer prediction by EPCA-2 when PSA was >10 ng/mL.

Conclusion: EPCA-2 has the power of differentiating BPH from cancer in prostate cancer suspects. This suggests that EPCA-2 can be helpful in diagnosing prostate cancer and can be a preventive test to avoid unnecessary biopsies considering PSA and age of the patient.

UP.363

Afro Ancestry Negatively Impact Prostate Biopsy Core Length

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Introduction and Objective: We have previously shown that Gleason underestimation occurs in 30-40% from biopsy to radical prostatectomy (RP), related to biopsy core length. Optimal prostate biopsy cores limit under sampling and improve prognostic accuracy. Afro descendant men have a higher risk of lethal prostate cancer compared to Caucasians; however, the basis to this difference remains unclear.

Materials and Methods: To investigate whether in an equal access medical center, race (Caucasian-Brazilians CB vs. Afro-Brazilians AB), clinical staging (T1c, Yes vs. No), Gleason grade-grouping system (1-5), prostate volume or prostate-specific antigen (PSA) impact biopsy core length quality in 202 (152 CB, 50 AB) prostate cancer men, mean age 63.6 years, undergoing centralized 12 cores biopsy and RP with 5 years mean follow up. Variables were prospectively analyzed through Mann-Whitney, Kruskal-Wallis, Cox proportional hazard models and Spearman correlation.

Results: Mean core length was significantly shorter in Afro descendants (1.10 ± 0.32 vs. 1.20 ± 0.29 cm, p= 0.037), positive digital rectal examination (> T1c, 1.11 ± 0.32 vs. 1.24 ± 0.26 cm, p= 0.003) and clinically significant tumors (1.12 ± 0.30 vs. 1.35 ± 0.29 p= 0.011). Analyzing positive and negative cores the same phenomenon occurred for negative but not for positive cores in Afro descendants. There was no significant impact of Gleason grade-grouping system (1-5), prostate volume or PSA on core length (all p> 0.05). Core tumor extension (p= 0.033) and PSA over 10 (p= 0.008) were predictive of recurrence, therefore additional treatments should be considered subsequent to RP. A significant negative correlation occurred between core tumor extension and core length and prostate volume (rho= -0.214, p= 0.015 and rho= -0.224, p= 0.008, respectively).

Conclusion: Race and clinical stage negatively impacted prostate biopsy quality and potentially core tumor extension in a centralized same access and same protocol cohort, important in advancing prostate biopsy techniques and understanding Afro descendant poor prostate cancer prognosis in the future.

UP.364

Incidence of Prostate Cancer in the Brong Ahafo Region of Ghana - 6 Years Prospective Study

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Introduction and Objective: Prostate cancer is gradually reaching a very high incidence in Africa, especially Sub-Saharan region. The alarming prevalence in the Sub-Saharan region must be met with effective public health programs to reduce the incidence. Reducing the paucity of database on prostate cancer is the aim of current study by assessing the incidence at Brong Ahafo Region of Ghana.

Materials and Methods: All prostate cancer cases recorded from 2009 to 2014 were retrospectively reviewed. Subjects from 40 years and above were eligible for screening. Diagnostic and screening tools for prostate cancer at the study site were family history, serum prostate specific antigen (PSA) test, digital rectal examination, Urological ultrasound scan and histopathology (biopsy). Age, PSA values and year of screening/diagnosis were retrieved from patient folders/archives. Histological findings considered in present study were diagnosis, carcinoma grading, perineural invasion (PNI) and percentage of affected tissues (%TA).

Results: Prostate cancer constituted 236 cases (40.07%) of 589 prostate diseases recorded. The highest annual prevalence was recorded in 2014 with incidence rate of 51 cases (21.6%). The ages ranged from 46 to 101 years, modal age range was 70-79 years (71.7 ± 11.2). The mean PSA of present study was 37.5ng/ml (±68.9) predominantly within the range 11-20.9ng/ml (27.9%). Moderately differentiated adenocarcinoma was the dominant grade accounting for 61.4% (145 cases). There was a significant correlation (p=0.001) between grading of prostate cancer and perineural invasion. Only 21.2% graded cancer cases had perineural invasion with >50% affected tissues found in half of them.

Conclusion: There is high incidence rate of prostate cancer in Ghana (40.07%). Ghanaian men between the ages of 60 to 79 years are mostly diagnosed of advanced prostatic carcinoma, most especially moderately differentiated. Reported cases usually showed high %TA and PNI.

UP.365

Comprehensive Evaluation of the Health-Related Quality of Life after Ultrasound-Guided Prostate Needle Biopsy: A Prospective Study

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UP.364, Table 1. Frequency Distribution of Year, Age, PSA Values and Grading of Prostate Cancer

	Frequency	Percentage (%)	Total (n=236)	Mean (SD)
YEAR				
2009	14	5.9		
2010	48	20.3		
2011	47	19.9	236	
2012	45	19.1		
2013	31	13.1		
2014	51	21.6		
AGE				
40-49	2	0.8		
50-59	24	10.2		
60-69	64	27.1	229	72.01 (10.2)
70-79	83	35.2		
80-89	44	18.6		
90-99	11	4.7		
100 and above	2	0.8		
PSA		1.8		
<4	4	22.5		
4-10.9	49	27.9		
11-20.9	61	9.6		
21-30.9	21	7.8		
31-40.9	17	14.6		
41-50.9	32	3.2	218	37.5 (68.9)
51-60.9	7	1.9		
61-70.9	3	0.9		
71-80.9	2	0.5		
81-90.9	1	5.9		
91-100.9	13	3.7		
>100.9	8			
GRADING				
WD	2	0.8		
MD	145	61.4	236	7.22(±0.91)
PD	85	36.0		
Ungraded	4	1.7		

SD = Standard Deviation; PSA = Prostate Specific Antigen Values; WD = Well Differentiated; MD = Moderately Differentiated; PD = Poorly Differentiated

Introduction and Objective: Prostate biopsy is considered a common procedure for the diagnosis of prostate cancer, with few major complications. There are some reports on complications, voiding function, and health-related quality of life (HRQOL) after prostate biopsy, but the association between prostate biopsy and erectile function, anxiety, and depression has been only sparsely investigated. With the aim of improving patient counseling and informed consent, we prospectively evaluated HRQOL outcomes, including sexual function and mental health, after prostate biopsy.

Materials and Methods: In total, 207 patients who underwent initial prostate needle biopsy were evaluated. All patients completed the following measurements before and 2–4 weeks after the procedure: Medical Outcomes Study Short-Form 8 (SF-8), Expanded Prostate Cancer Index Composite (EPIC), International Prostate Symptom Score (IPSS), International Index of Erectile Function-5 (IIEF-5), and Self-Rating Depression Scale (SDS).

Results: No significant differences were evident between baseline and postbiopsy scores for SF-8. The EPIC scores for the general urinary domain and all its subscales dropped significantly, and the scores for the general sexual domain and its function decreased significantly after biopsy. Positive correlations between function and bother subscales within domains, including urinary and bowel components were high, but no positive correlation was observed between sexual function and bother. The IPSS was not significantly increased, but the QOL score was significantly decreased after biopsy. A significant difference between baseline and postbiopsy was noted for the IIEF-5 score, and in particular, patients who were initially potent significantly developed erectile dysfunction (ED) after biopsy. The SDS score was significantly different between baseline and postbiopsy, and patients aged 73 years or older showed clinically significant depression after the procedure.

Conclusion: Based on these data, urologists should pay attention not only to physical and short-lasting complications related to the biopsy procedure but also to HRQOL, including sexual function and mental health after prostate biopsy.

UP.366

Concordance of Gleason Score between Prostate Needle Biopsy and Radical Prostatectomy with Three-Dimensional Ultrasound and Biopsy Core Preembedding

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Introduction and Objective: Concordance between biopsy Gleason Score (bGS) with systematic, 2D greyscale transrectal ultrasound (TRUS)-guided biopsies and prostatectomy Gleason score (pGS) is poor with GS upgrading ranging from 30-40%. We determined the value of 3D greyscale TRUS-guidance and biopsy core pre-embedding on concordance between the GS of prostate biopsies and radical prostatectomy (RP) specimens in a consecutive cohort of men undergoing systematic prostate biopsies and subsequent RP for prostate cancer.

Materials and Methods: All consecutive patients who underwent prostate biopsies and subsequent RP for prostate cancer at our institution from 2007 to 2016 were retrospectively reviewed and divided into two: the 2D group (2007-2013, n=266) underwent systematic 12-core, 2D TRUS-guided biopsies with biopsy cores of each prostate lobe floating free in formalin vials. The 3D group (2013-2016, n=129) underwent systematic 12-core biopsies using a 3D TRUS system with real-time tracking and displaying of the needle in a 3D model. Biopsy cores were processed separately using a semi-automated pre-embedding system allowing for fixation of straight aligned biopsy cores on cassettes throughout the entire pathology processing. GS concordance of both groups was evaluated using the k-coefficient based on GS categories: 6, 7a (3+4=7), 7b (4+3=7) and 8-10. Predictors of GS 6 upgrading were assessed using logistic regression models.

Results: The GS of prostate biopsies and RP were concordant in 63.5% of all cases, while 29.1% were upgraded and 7.3% were downgraded. Gleason concordance was comparable between both groups with a $\kappa = 0.44$ (95%-CI: 0.33-0.56) and 0.42 (95%-CI: 0.33-0.50) for the 3D group and 2D group, respectively. On multivariate analysis, higher PSA (p=0.039), clinical T2 stage (p=0.018) and more positive biopsy cores (p=0.020) significantly predicted GS 6 upgrading. Biopsy GS 6 patients with GS upgrading had higher pathological T-stages (p<0.001), more positive surgical margins (p=0.035) and more biochemical recurrences after RP (p<0.001).

Conclusion: 3D greyscale TRUS-guidance with biopsy core pre-embedding does not improve GS concor-

UP.364, Table 2. Grading of Adenocarcinoma with Perineural Invasion, Tissue Affected and Serum PSA

	GRADING			Total	p-value
	WD	MD	PD		
PNI					
N	2	92	48	142	0.001
P		27	23	50	
% TA	1				
<10		9		10	
10-39	1	25	13	28	0.18
40-69		43	18	62	
>70		41	42	83	
PSA					
<4		2	2	4	
4-10.9		33	15	48	
11-20.9	2	38	21	61	
21-30.9		15	6	21	
31-40.9		11	6	17	
41-50.9		17	15	32	0.645
51-60.9		3	4	7	
61-70.9		1	2	3	
71-80.9		2		2	
81-90.9		1		1	
91-100.9		6	5	11	
>100.9		5	3	8	

TA = %Tissue affected; PNI = Perineural Invasion; N = Perineural Invasion Absent; P = Perineural Invasion Present

dance. Men with upgrading of bGS 6 disease are at greater risk of adverse pathologic features and biochemical recurrence emphasizing the need for recognition of low-grade disease upgrading and supporting the need for improved detection techniques.

UP.367

Are we Overdiagnosing Gleason 8 Scores on Biopsy?

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Introduction and Objective: Transrectal core biopsy and Gleason Scoring are routinely used for estimating final pathological grade and for the appropriate treatment of prostate cancer (PC). In our work we evaluated the disparity between PC diagnosed as Gleason 8 on biopsy and their actual pathology after radical prostatectomy (RP).

Materials and Methods: Between 2010-2016, 560 men underwent open RP. 41 men were diagnosed with Gleason 8 pathology on prostate biopsy. Biopsy and RP pathology were compared and Student's t-test, Chi-square test and Fisher's exact test were used for statistical analysis.

Results: 56.1% (23/41) of clinical Gleason 8 diagnoses on biopsy were downgraded after RP on histopathology analysis. There were 22 specimens downgraded to Gleason 7 (Gleason 3+4 n=12; Gleason 4+3 n = 10) and 1 was downgraded to Gleason 6. Pathology downgrading is significantly associated with lower PSA at biopsy (media 4.47 vs 12.9 ng/mL, p<0.03) and with extracapsular extension (38.1% vs 61.9%, p<0.02). It is strongly associated with lower percentage of positive margins (26.7% vs 73.3%). Seminal vesical invasion, age and clinical staging were not associated with pathology downgrading.

Conclusion: We conclude that there was more than an half Gleason 8 on prostate biopsy that was downgraded at RP. Almost 1/3 were downgraded to Gleason 7 (3+4) and 1/4 to Gleason 7 (4+3). This means that we could be over-diagnosing Gleason 8. This is not only of concern for patients where no final pathology will be available (those undergoing radiotherapy or brachytherapy), but also for those patients where a small difference of one or two Gleason grades might influence the therapeutic decision. The limitations of this scoring system should be considered when selecting treatments, and should be an effort refining PC diagnostic techniques.

UP.368

Impact of National Cancer Policies on Global Prostate Cancer Incidence and Mortality: A Cancer Atlas Analysis

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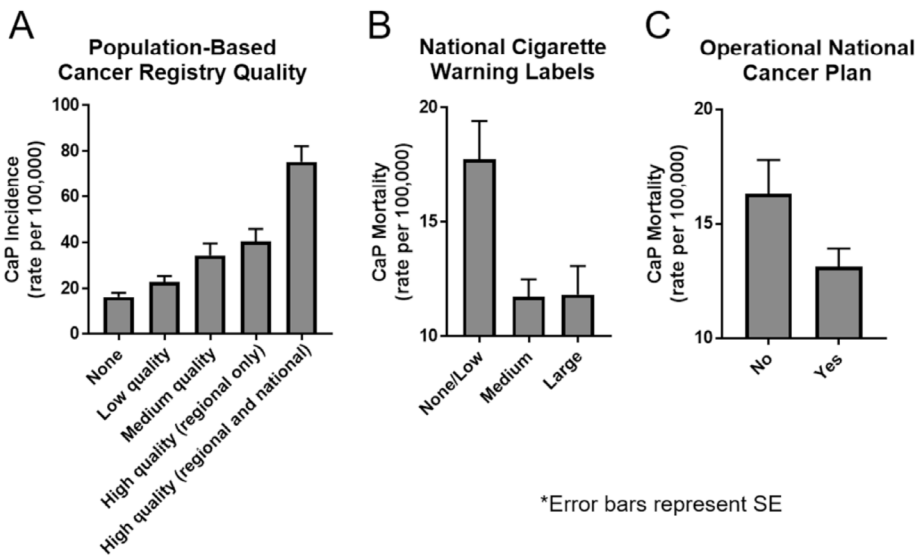
Introduction and Objective: Prostate cancer (CaP) is an epidemiologically complex disease with heterogeneous incidence and mortality. In global CaP epidemiology, the influence of health systems-level factors on disease burden is unclear. This study examines how cancer surveillance programs and policies of national health infrastructures impact the global burden of CaP.

Materials and Methods: We queried the Cancer Atlas, a global cancer database of the World Health Organization and American Cancer Society, for structural and socioeconomic variables pertinent to CaP in national health systems. We performed Pearson correlations and multiple regression analyses using these variables and country-specific rates of CaP incidence and mortality.

Results: We analyzed CaP incidence and mortality rates reported by 187 national health systems. Country-specific incidence was strongly positively

UP.368, Figure 1. Association of National Cancer Registration, Prevention and Control Programs with Global Prostate Cancer Incidence and Mortality



correlated with the quality of population-based cancer registries (PBCR), which collect and measure surveillance statistics (P<0.001). Having a national high-quality PBCR (vs. regional high-quality or lesser quality) was the strongest predictor of CaP incidence among all structural and socioeconomic variables (Fig. 1A; P<0.001). Health systems with cancer control policies had lower rates of CaP mortality. For instance, mortality was negatively correlated with the extent of warning labels on cigarette packaging (as a proxy for cancer prevention programs) (P<0.001); mean mortality was 11.7 and 11.8/100,000 for countries with medium and large labels, respectively, vs. 17.8/100,000 for small/no labels (Fig. 1B). CaP mortality was also lower in countries with vs. without an operational national cancer control strategy (Fig. 1C; 13.1 vs. 16.3/100,000, P=0.05).

Conclusion: Although the substantially higher incidence of CaP in countries with a high-quality PBCR may reflect differences in screening practices, a portion may be explained by a decreased capture of clinically-significant CaP in countries with regional-only or lower quality PBCR. Given the heterogeneity of this disease and diverse national healthcare priorities, the significance of these findings warrants further study.

UP.369

The Use of MRI after the PROMIS Trial

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Introduction and Objective: PROMIS suggested avoiding prostate biopsies (PB) in the 27% of patients presenting with PIRADS score 1-2 irrespective of clinical findings. We investigated the use of MRI versus clinical parameters as triage tests for performing biopsies at our center.

Materials and Methods: Between 03-2015 and 09-2016, a total of 358 patients underwent prostate MRI for clinical suspicion of prostate cancer (PCa). PSA density (PSAd), digital rectal examination (DRE), MRI and pathology results were retrospectively collected from the medical charts. Lineair regression analysis was used to evaluate impact of pre-biopsy variables on the decision to perform PB and on pathology outcomes. Significant PCa was defined as > 2 positive cores or > Gleason 6 on biopsy and as Gleason 6 with total tumor volume (TTV) > 2.5 ml or Gleason 3+4 with TTV > 0.7 ml on final pathology.

Results: Given the low number of PIRADS 1-2 patients (10%) and the low Pca risk for PIRADS 3 patients (9%) this latter was included in the MRI negative group. In 17% of patients (60/358) all three parameters were favorable. In 58% (35/60) of them PB were still performed. The risk of significant PCa in that group was only 9% (3/35) while the risk of overdiagnosis of insignificant PCa was 29% (10/35).

Conclusion: At our center the results of MRI are used in conjunction with clinical parameters to make the decision about performing prostate biopsies. The clinical implication of a PIRADS 3 laesion most likely differs per center/radiologist. In the group of patients with all favorable risk factors there was still a 58% biopsy rate. We should aim at improving this number in order to decrease overdiagnosis.

UP.370

The Promise of Pre-Biopsy MRI in a District General Hospital (DGH) Setting

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Introduction and Objective: Pre-biopsy multi-parametric magnetic resonance imaging (MP-MRI) is reported to have a negative predictive value (NPV) of 89% in prostate cancer diagnosis & can avoid a biopsy in around 25%. We aimed to replicate these results in a DGH.

Materials and Methods: One hundred and eight men underwent MP-MRI & template prostate (TPM-Biopsy). The presence or absence of an index lesion on MP-MRI was reported. Clinically significant (CS) cancer was defined as Gleason ≥4+3 and/or Maximum tumour length ≥6mm and/or tumour ≥40% core involvement. MP-MRI results were compared with TPM-Biopsy to derive sensitivity (S), specificity (Sp), positive predictive value (PPV) and NPV for MP-MRI.

Results: MP-MRI demonstrated a lesion in 85. Of these 44 had cancer (22 were CS). Of the 23 with no lesion, 9 had cancer (4 were CS). For MP-MRI, S, Sp, PPV & NPV was 84.62% [95%CI 65.13-95.64], 23.17% [14.56-33.80], 25.88% [22.19-29.95] & 82.61% [63.98-92.70]. If MP-MRI is used as a screening test, a negative MP-MRI would allow 21.3% to avoid biopsy with 3.7% fewer clinically significant cancers identified. If we defined CS cancer as any >intermediate risk (PSA>10 or Gleason score >7 or clinical stage of >T2b) S, Sp, PPV & NPV for MP-MRI was 78.95% [62.68-90.45], 21.43% [12.52-32.87], 35.29% [30.77-40.10] & 65.22% [46.66-80.07].

Conslusions: The National Institute of Health and Care Excellence (NICE) advise against repeat prostate biopsy if the MRI is normal, however our results suggest 17-35% CS prostate cancer is missed by MP-MRI depending on definition used. Currently we feel MRI alone is an unreliable test to exclude CS prostate cancer in our unit.

UP.369, Table 1.

Parameter		% of total population	% Undergoing PB	% Significant PCa	% Insignificant Pca
PIRADS	1-2	10	44	25	31
	3	16	76	9	22
	4-5	74	94	66	15
			p < 0.001	*p < 0.001*	*p < 0.001*
DRE	neg	66	82	43	23
	pos	33	97	78	6
			p < 0.001	*p < 0.001*	*p < 0.001*
PSAd	< 0.15	51	79	45	23
	≥ 0.15	46	93	66	13
			p < 0.001	*p < 0.001*	*p = 0.01*

UP.371

Evaluation of Prostate Biopsy Protocol among Nigerian Urologists: Current Level of Practice

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Introduction and Objectives: Prostate biopsy (PB) is a surgical procedure aimed at obtaining prostatic tissue with a tru-cut biopsy needle for histologic examination. Techniques of PB have evolved in the past few decades with image guided biopsies being the mainstay worldwide. Image guidance is aimed at increasing the yield and reducing false negative results. Protocols that guide PB often differ from one urological unit to another and there is no unified protocol for PB in Nigeria. We present a survey of PB protocols among a cohort of Nigerian urologists aimed to determine and/or highlight any differences in pre-procedural preparation, PB procedure and post-procedural management.

Materials and Methods: A cross-sectional survey using structured questionnaires was carried out among 68 Nigerian Urologists at the annual conference of the Nigerian Association of Urological Surgeons (NAUS) held in October 2016 at Calabar, Nigeria.

Results: Of the 100 questionnaires administered, a response rate of 68% was achieved (n=68). The respondents were from sixteen (16) different tertiary hospitals in Nigeria. Twenty (29.4%) respondents were of the cadre of Consultant while the rest were Senior registrars. Indications for PB were PSA> 10ng/ml and abnormal prostate findings on digital rectal examination in 94.1% of respondents. Fifty eight urologists (85.3%) spread across 12 centres routinely performed digitally guided trans-rectal PB due to lack of easy access to trans-rectal ultrasound scan (TRUSS) machines while 10 urologists from the remaining 4 centres routinely perform TRUSS guided PB. Sixty two (91.2%) respondents used either fluoroquinolones or aminoglycosides for antibiotic prophylaxis and only 5 respondents (7.4%) prescribed bowel enema before PB. Caudal block was employed by 60 respondents (88.2%) for anaesthesia and size 18 Fr tru-cut biopsy needle was the most commonly used.

Conclusion: Majority of the urologists in Nigeria still practice digitally guided trans-rectal PB. Patients with PSA in the grey zone are not routinely biopsied among Nigerian urologists. Easier access of urologists to trans-rectal USS apparatus is urgently needed in Nigeria.

UP.372

Consecutive Series Evaluation with Pre-Biopsy MRI: Re-Naming the Horse and the Cart

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Introduction and Objectives: The re-introduction of multiparametric MRI (mpMRI) into the care process of men with prostate cancer has led to the need for the definition of its utility and limitations in clinical practice. The variation in uptake of this modality between clinicians has created various patient cohorts. We present a consecutive series of patients who underwent mpMRI of the prostate prior to trans-perineal biopsy.

Materials and Methods: Consecutive patients reviewed in the outpatient setting were reviewed with MRI prior to prostate biopsy. All biopsies were by the transperineal approach. All procedures involved grid directed biopsies according to Victorian Transperineal Biopsy Collaboration template. Patients who were reported to have an index lesion on mpMRI also underwent MRI fusion targeted biopsies of the abnormality. Histopathology was reviewed and analyzed for longest core length involving cancer, highest Gleason grade cancer location and in cases of targeted biopsy, whether this site matched either of these two criteria. Biopsy results were also analyzed for average number of cores and for correlation between PIRADS grade and cancer presence.

Results: Forty-four consecutive patients met inclusion criteria. Twenty-one patients had an index lesion on mpMRI that were targeted on biopsy. Of these, less than 50% of patients displayed the target site as the largest core of prostate cancer, but more than 75% of target lesions biopsied were revealed as the location for the highest Gleason grade pathology. Two patients that underwent targeted biopsy did not reveal cancer in any sites. Of the patients that underwent standard template biopsies, prostate cancer (Gleason 6) was revealed in 50% of patients with only one patient displaying higher-grade carcinoma (Gleason 4+3). Average numbers of cores taken were 25 and 24 for template and targeted biopsies respectively.

Conclusions: mpMRI has displayed its value in the identification of suspicious lesions of the prostate and can help to guide biopsy to increase diagnostic yield, however, mpMRI is not sufficient to rule out all areas of clinically significant prostate cancer. Targeted biopsies of MRI index lesions alone would fail to reveal prostate cancer in other areas of the prostate and would not have been sufficient for adequate clinical decision-making in our cohort.

UP.373

Risk Factors and Its Predictive Value in Prostate Cancer Diagnosis at First Set of Systematic Prostate Biopsy

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Introduction and Objective: Prostate cancer (PCa) is the most frequent diagnosed urological malignancy of the man above 50 year. About one man in six will be diagnosed with the PCa in his life. Identifying risk factors is of utmost of importance. Evaluation of the risk factors in PCa and how they can contribute in PCa diagnosis at the first set of prostate systematic biopsies we studied.

Materials and Methods: This prospective study was started in 2015, evaluates data of 102 patients, with prostate biopsy for PCa suspicion. They complete a self-designed questionnaire, about the most important known risk factors in PCa development (age, high, familial history of prostate cancer, use of steroids, androgen substitution, known irradiation), and others like diet, BMI, smoking, associate diseases.

Results: The average age of our patients was 69.82 (71±8.39; 39- 80 ani). The statistical evaluation of the age and levels of tPSA we observed a weak correlation (r=0.24), but a statistically significant difference (p = 0.02) between this two constants. The mean value of tPSA was 63.1 ng/ml (14.16±179.1; 0.12- 1000 ng/ml). The efficiency of the diagnosis of PCa was 48.03% (n = 49), with average value of tPSA of 30.50 ng/ml. Among patients with confirmed PCa 17 (16.66%) patients had a positive family history for PCa. According to the study, we found that 10 (9.8%) of the 102 (100%) patients had obesity, with BMI greater than 30 kg/m2. In this group we identified PCa in 9 (90%) cases. We can't identify a statistical significant correlation between smoking and PCa (p=0.43)

Conclusion: The identification of risk factors and an early diagnosis can facilitate curative treatment in PCa. Patients aged over 40 or 50 years, and positive familial history for PCa we recommend early screening. Diet rich in saturated fats, metabolic syndrome (BMI greater than 30 kg/m2, dyslipidemia, hypertension) can facilitate the appearance of PCa.

UP.374

Prostate Specific Antigen Density Is More Effective than Prostate Specific Antigen as a Predictor of Prostate Cancer Diagnosis, Gleason Score and Tumour Stage in Men Being Assessed for Prostate Cancer

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Introduction and Objective: The level of prostate specific antigen density (PSAD) was initially used to differentiate benign from malignant prostatic disease in men with high PSA. Thereafter, many authors investigated whether PSAD may help predict patients with adverse pathological features and those likely to develop biochemical recurrence following radical prostatectomy. Some studies demonstrated an association between PSAD and either adverse pathological features or response to therapy, others reported no benefit from using PSAD. The aim of this study is to determine the effect of PSAD on the Gleason score and tumour stage in men subjected to TRUS biopsy of the prostate.

Materials and Methods: PSAD was measured in 963 men undergoing assessment to confirm or exclude prostate cancer (PCa) based on high serum PSA or DRE showing anomaly in the prostate gland. The patients had 12 core TRUS guided prostate biopsies. PSAD level was correlated to the Gleason score and clinical stage of disease as found on histopathological examination of the prostate biopsy and findings on TRUS of the prostate. Final histopathological diagnosis was BPH, BPH + prostatitis (if more than 3 core biopsies of the prostate showed features of inflammation) or PCa.

Results: A total of 887 patients with complete data set were analysed. The median and interquartile range (IQR) PSAD values were 0.098 (0.6-0.16), 0.098 (0.65-0.15) and 0.185 (0.10-0.39) ng/ml/cc for BPH, BPH + prostatitis and PCa respectively (p<0.001). The median and IQR PSAD was 0.133 (0.09 - 0.23), 0.186 (0.12-0.36), and 0.266 (0.13 -1.0) ng/ml/cc for patients with Gleason scores 6, 7 and 8-10 respectively (p<0.001). The median and IQR PSAD was 0.124 (0.8 -0.26), 0.137(0.8-0.24), 0.244 (0.13-0.44) and 0.205 (0.12 – 0.69) ng/ml/cc for patients with T1 (a+c), T2a, T2b and T2c respectively (p<0.001).

Conclusions: PSAD is a useful marker of Gleason score and clinical stage of prostate cancer detected at TRUS biopsy. Determination of PSAD may be more useful than PSA for further risk stratification of patients with PCa. This may assist in the selection of better treatment strategy for patients with PCa.

UP.375

Multiparametric Magnetic Resonance Targeted Biopsy with Cognitive Guidance: Experience after Two Years

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Introduction and Objective: Multiparametric magnetic resonance imaging (mpMRI) can evaluate lesions suspicious for prostate cancer (PCa). Imaging fusion can be performed either cognitively or electronically, using a fusion device. The aim of the study was to evaluate the efficacy of mpMRI targeted biopsies with cognitive guidance.

Materials and Methods: One hundred and fifteen consecutive patients (mean age, 67.2 years; mean PSA, 10.4 ng/ml; mean prostate volume, 62.9 cc, mean PSA density 0.2 ng/ml/cc, median previous prostate biopsy, 1 [1-5]) with at least one prior negative TRUS-guided prostate biopsy and persistent suspicion of PCa were included in this study. All patients underwent mpMRI at 1,5 Tesla and suspicious lesions were rated using the PI-RADS v1 and v2. We performed mpMRI targeted biopsies with cognitive guidance to suspicious lesions

but also systematic to back up the whole prostate in an outpatient surgical setting.

Results: PCa detection rate was 32.2% (n=37) and clinically significant PCa detection rate was 27.8% (n=32) according to Epstein criteria. Cancer detection for patients with low, intermediate and high suspected lesions on PI-RADS were 14.3%, 15.2% and 50.9% (p=0.001). Twenty seven percent and 16.2% of cancer patients were at intermediate and high risk according to D'Amico score, respectively. Sensitivity, specificity, positive predictive value, negative predictive value and area under the curve (AUC) in detecting PCa was 94.6% (CI 85.9-100), 15.4% (CI 6.7-24), 34.6% (CI 24.9-44-4), 85.7 (CI 63.8-100) and 0.7 (CI 0.61-0.79) respectively. No relationship was found between PSA, prostate volume, PSA density, Gleason score and clinically significant PCa with PI-RADS classification.

Conclusion: mpMRI and cognitively targeted prostate biopsy seems to be effective for the detection of PCa in patients with previous negative TRUS-guided biopsies. However, PI-RADS score did not improve PCa detection rate in our serie.

UP.376

Are Targeted Prostate Biopsies Well Targeted?

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Introduction and Objective: Patients with suspicious areas detected on prostate mpMRI undergo targeted biopsies alongside a standard set of peripheral zone biopsies. Often we have found targeted biopsies to be benign, but peripheral zone biopsies showed significant lesions. Currently, patients suspected of having prostate cancer will require a TRUS-guided biopsy of the prostate. If the results from the TRUS-guided biopsy are negative, but there is still suspicion of prostate cancer due to persistent elevated PSA then mpMRI-guided biopsy ('Targeted Prostate Biopsy') is used to detect clinically significant prostate cancer.

Materials and Methods: We studied 126 patients who underwent targeted biopsies between June and December 2016 to find how good Targeted Prostate Biopsies were targeted. We also discuss the ways to improve the Prostate Target Biopsies outcomes in this presentation.

Results: A total of 126 patients were included in this study. Of these, 23 patients' targeted biopsies were benign but peripheral zone biopsies showed prostate cancer. We have investigated this subgroup of patients with discrepancies and reviewed: 1) Accuracy of PI-RADS scoring, 2) Appropriate targeting of the suspicious area during biopsy and 3) Need for image fusion methods to improve localisation of targets.

Conclusion: We conclude that Targeted Prostate Biopsy does add more value to the diagnosis of prostate cancer but its application has to be improved to get better outcomes. Radiologist need to improve the localisation of the suspicious areas. Cognitive location of lesions in trans rectal ultrasound is based on mpMRI is not enough. An appropriate image fusion method has to be used.

UP.377

Detection of Radiorecurrent Prostate Cancer Using Multiparametric MRI and Transperineal Prostate Mapping Biopsy

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Introduction and Objective: The use of multiparametric magnetic resonance imaging (mp-MRI) for prostate cancer has increased over recent years, mainly for detection staging and active surveillance. Due to the suspicion of biochemical failure recurrence, it is becoming a significant reason for clinicians to request mp-MRI prior transperineal prostate biopsy. There are limited reports of its use in the setting of radio recurrent disease. The aim of our analysis was to asses mp-MRI compared to transperineal prostate biopsy in verifying radiorecurrent prostate cancer.

Materials and Methods: Twenty eight men with a mean age of 66.7 (range, 52-80) with biochemical failure after external beam radiotherapy underwent mp-MRI (T2-weighted, high b-value, multi-b-value apparent diffusion coefficient and dynamic contrast-enhanced imaging); then transperineal systematic template prostate mapping (TPM) biopsy. Radiologist scores and location were matched with TPM histopathology of the prostate.

Results: Radiorecurrent disease was diagnosed, on average, 8.2 years (range 3.25-19.1 years) after the initial treatment of Gleasson 6(3+3), cT2 stage prostate cancer with PSA 9.83±6.9ng/ml. At the time of biochemical recurrence, the PSA was 7.61±6.12 ng/ml. On the confirming TPM biopsy, local prostate cancer recurrence was detected in 22 patients. In 17 patients Gleason score was upgraded and only 1 was downgraded compared to initial prostate biopsy. Mp-MRI data matched with TPM only in 63.5% cases. If there were suspicion of cancer recurrence on mp-MRI, prostate cancer was confirmed by biopsy in 15 out of 18 cases (83.3%). When there were no radiological signs of disease recurrence, biopsies were still positive for prostate cancer in 6 cases out of 7 (85.7%).

Conclusion: Mp-MRI can detect radiorecurrent prostate cancer. However, higher volume multicentral studies would be required to confirming mp-MRI place in detecting radiorecurrent prostate cancer.

UP.378

Somatic Mutations and Aggressiveness of Prostate Cancer at the Moment of Diagnosis

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Introduction and Objective: A high proportion of prostate cancer (PCa) is considered sporadic, which means that the damage to the genes occurs by chance after birth. However, there is not much data for somatic mutations at the moment of PCa diagnosis. The objective is to evaluate some of the main genes and their somatic mutations (EGFR, KIT and KRAS) in relation to PCa, in samples from prostatic biopsies intended for PCa diagnosis.

UP.378, Table 1. Somatic Mutations Included in the Analysis

EGFR	c.2235_2249del15
	2235, 2236, 2155T
	c.2236_2250del15
	c.2237_2251del15
	c.2239_2247del9
KIT	c.2573T>G
	c.1621A>C
	c.1621A>C, c.2447A>T
	c.2446G>T
KRAS	c.182A>T
	c.34G>A
	c.34G>A, c.38G>T
	c.34G>C
	c.34G>C, c.38G>C
	c.34G>T, c.182A>G
	c.35G>A
	c.35G>C
	c.35G>T
	c.37G>C
	c.37G>T
	c.38G>A
	c.38G>C
	c.38G>T

Materials and Methods: A total of 60 tissue samples from patients with PCa-positive biopsies were included in the analysis. The somatic mutation analysis was performed by the Custom qBiomarker Somatic Mutation PCR Array Human Custom (Applied Biosystems) about EGFR, KIT and KRAS (Table 1). These arrays were analysed by 7900 HT Fast Real-Time PCR System software.

Results: We found that mutations in gene KIT were associated with Gleason score ≥7 (p=0.040). The most prevalent mutations among PCa patients were c.38G>C in KRAS gene and c.1621A>C in KIT.

Conclusion: Somatic mutations in KIT gene can be useful in predicting aggressive PCa at the moment of diagnosis.

UP.379

A Systematic Review of the Effects of Nerve Sparing during Radical Prostatectomy

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Introduction and Objective: The primary aim of this study was to conduct a review of the association between nerve sparing in radical prostatectomy and its

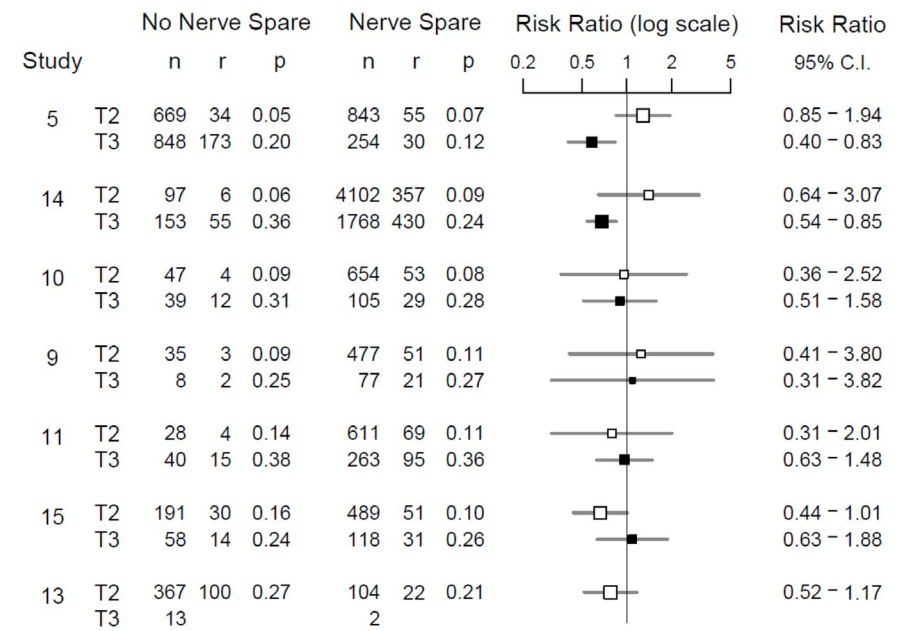
association with outcomes of continence, potency and positive margins.

Materials and Methods: This review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-analysis statement (2009). MEDLINE, EMBASE, The Cochrane Library, Health Technology Assessment Database, and Web of Science were searched from 1966 to December 2015, yielding 60 records. RCTs and other controlled or comparative studies were eligible for inclusion. Studies reporting on at least one of the following outcomes, positive surgical margins, continence and potency with data available for nerve sparing and non-nerve sparing groups were included. 16 studies were available for final analysis and included 16269 participants. Primary outcomes analysed where positive surgical margins and functional outcomes (continence and potency).

Results: Comparing nerve sparing with non-nerve sparing prostatectomy, the proportion of cases resulting in incontinence is lower for nerve sparing prostatectomy. The proportions of cases resulting in impotence were 0.92 (CI: 0.88 – 0.96) for non-nerve sparing operations, 0.43 (CI: 0.40 – 0.46) for all nerve sparing operations, 0.59 (CI: 0.51 – 0.67) for unilateral and 0.39 (CI: 0.35 – 0.42) for bilateral nerve sparing. With regards to positive margin rates, these are higher for T3 cancers than for T2 cancers, both for operations that used nerve sparing and for those that did not. For T2 cancers there is little or no difference in the proportion of cases resulting in positive margins for operations with and without nerve sparing. For T3 cancers the proportions of cases with positive margins were practically the same for operations with and without nerve sparing.

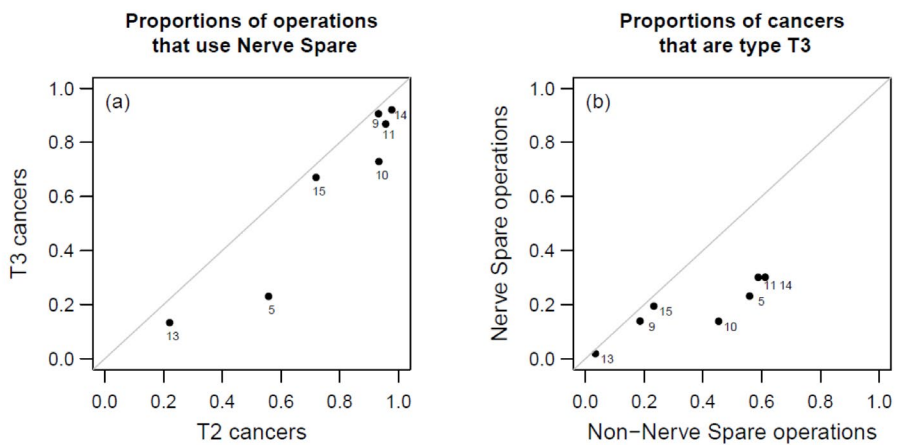
Conclusion: This systematic review demonstrates a positive association between nerve sparing and better functional outcomes after prostate cancer surgery. The association with potency is more robust than that for continence outcomes.

UP.379, Figure 1. Summary Data and Forest Plots of the Relative Risk of PSM



With 95% confidence intervals for operations with and without nerve sparing, for each of the two cancer types (T2 and T3) for seven studies (see table 1): n denotes the number of operations, r is the number with outcome "positive surgical margin" (PSM) and p = r/n is the proportion resulting in PSM. Studies are listed in increasing order of p for non-nerve sparing operations on T2 cancers. Study 15 did not report PSM outcomes for 15 operations on T3 cancers.

UP.379, Figure 2.



(a) The proportion of nerve sparing operations for T3 cancers plotted against corresponding proportion for T2 cancers, for the seven studies in Figure (Figure 1 in stats).

(b) The proportion of T3 cancers among nerve sparing operations plotted against corresponding proportion among non-nerve sparing operations for the same seven studies. Labels denote study numbers (Table 1)

UP.380

Combined Chemo-Hormonal-Radiation Treatment of High- and Very-High-Risk Non-Metastatic Prostate Cancer (Overview)

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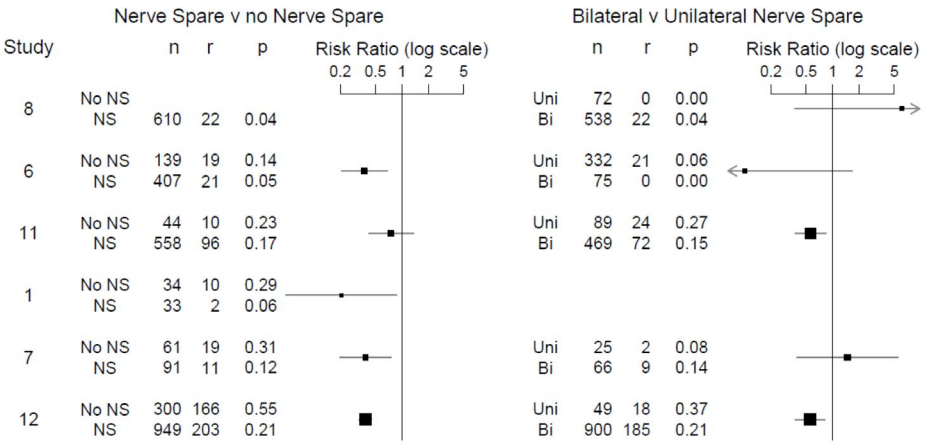
Introduction and Objective: Treatment of high- and very-high risk prostate cancer appears to be extremely difficult. EBRT combined with long-term ADT plays the main role, though low treatment effectiveness compared to one of intermediate- and low-risk groups pushes towards finding new treatment options and modalities. This review enlightens data from modern publications and reviews concerning combined treatment uncluding (or not) chemotherapy and different types of radiation therapy.

Materials and Methods: Seventy six sources used, including data from meta-analyses and phase III trials. Risk stratification. Several organizations (NCCN, NICE, ESMO, AUA, EAU and others.) offer risk stratification systems. The NCCN system includes the very-high-risk group (T3b-T4). Nowadays high-risk is set (EAU) when stages ≥T2c or PSA >20 or Gleason score 8–10 appear.

Results: EBRT: Recommended dose is ≥74Gy not depending on risk group. Low overall 10-years survival rate makes searching for new effective treatments inevitable. Androgen deprivation therapy: Long-term regimens (2-3 years) of ADT in high-risk prostate cancer is undoubtable and neccecary. Biochemical progression-free survival can be achieved by using LHRH-antagonists in long-term regimens. Brachytherapy: Alone and its combination with EBRT show high effectiveness concerning progression-free survival. In high-risk group survival rates are significantly lower. Improvement can be achieved by using adjuvant long-term ADT and other systemic therapy. Nowadays the results of such clinical trials are not available. Chemotherapy: As part of combination treatment of non-metastatic hormonal-sensitive high-risk prostate cancer is proved to be effective (increasing progression-free and overall survival), but still rarely used treatment option.

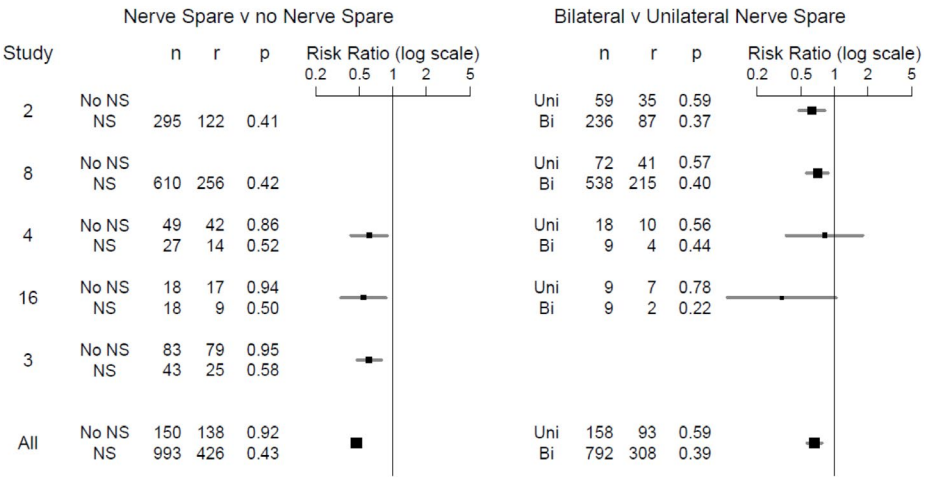
Conclusion: Reviews, meta-analyses and phase III clinical trials results show improvement of PFS (and some – OS) when using a multimodal approach

UP.379, Figure 3. Summary Data and Forest Plots of the Relative Risk of Incontinence



With 95% confidence intervals for operations with and without nerve sparing, and with bilateral compared with unilateral nerve sparing, for six studies (Table 1): n denotes the number of operations, r is the number with outcome "incontinent" and p = r/n is the proportion incontinent. Studies are listed by increasing order of p for non-nerve sparing operations. Study 9 did not include non-nerve sparing operations and study 1 did not report separate data for unilateral and bilateral nerve sparing.

UP.379, Figure 4. Summary Data and Forest Plots of the Relative Risk of Impotence



With 95% confidence intervals for operations with and without nerve sparing, and with bilateral compared with unilateral nerve sparing, for five studies (Table 1): n denotes the number of operations, r is the number with the outcome "impotent" and p = r/n is the proportion of impotent subjects. Studies are listed in increasing order of p for non-nerve sparing operations. Studies 2 and 9 did not include non-nerve sparing operations, and study 3 did not report separate data for unilateral and bilateral nerve sparing procedures. For each category of operation, the data are consistent with the same risk of impotence in each study, and the last two rows give pooled data across all five studies.

with chemotherapy. Combination treatment of taxane-base chemotherapy, LHRH-antagonists as ADT and brachytherapy alone or with EBRT seems to be extremely perspective and needing further investigation.

UP.381

Robotic Radical Prostatectomy-Intermediate Risk Disease Gleason 3+4 or 4+3: What Is the Difference?

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Introduction and Objective: Robotic laparoscopic assisted radical prostatectomy is the gold standard for localised prostate cancer. Intermediate risk prostate cancer can be defined as Gleason 3+4 or 4+3- We review outcomes for both to see if there is any difference and how it would impact on our management.

Materials and Methods: A prospective database of 608 robotic radical laparoscopic prostatectomies (single centre, single surgeon, 2005-2015) was reviewed for primary outcomes of margins status and biochemical recurrence requiring treatment.

Results: The mean age 60.2 years (range 42- 75). The mean follow-up time was 5 years. 634 cases were reviewed, 318 were intermediate risk. Intermediate risk disease: 318 cases, 215 cases Gleason 3+4 (50 cases had lymph nodes sampled, all No). 103 cases were Gleason 4+3. Nine positive margins, requiring further therapy/ developing biochemical relapse. Negative margins 309 cases, 5 cases of recurrence (negative margin) requiring treatment.

Conclusion: This clearly demonstrates recurrence can occur despite a negative margin. PSA monitoring is central to follow-up in the post-operative period, however positive margins are clearly a risk factor for recurrence.

UP.382

Early Dutasteride Monotherapy in Men with Detectable Serum Prostate-Specific Antigen Levels Following Radical Prostatectomy: A Prospective Trial

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Introduction and Objective: To investigate the effects of early administration of dutasteride in patients with detectable serum prostate-specific antigen (PSA) levels after radical prostatectomy (RP).

Materials and Methods: A prospective open-label study, with a cumulative analysis of asymptomatic increase in PSA following RP, was conducted from January 2005 to December 2013. An early increase in PSA level was defined as detectable serum PSA level > 0.04 ng/mL. Patients with PSA level > 0.04 ng/mL were treated with dutasteride 0.5 mg daily. Serum PSA level and biochemical recurrence (BCR) were monitored. We divided the patients into two groups based on the serum PSA response after dutasteride treatment.

Results: Eighty patients were included in the study. At the median follow-up of 51.8 months, 56 patients (70.0%) showed a decrease of greater than 10% in serum PSA level, and 24 showed increased PSA levels. Twelve of the 56 patients with PSA response showed subsequently increased PSA. Intergroup differences in preoperative PSA levels, PSA nadir levels, and Gleason score of 6 or less were significant (p=0.028, 0.030, and 0.035, respectively). A multivariate analysis revealed that Gleason score of 6 or less (p=0.018) and PSA nadir levels (p=0.011) were predictive factors for PSA response after early dutasteride treatment in men with increased PSA levels following RP.

Conclusions: Early monotherapy of dutasteride showed a decline in serum PSA levels in men with lower pretreatment PSA levels, lower nadir PSA levels, and a Gleason score 6, when the serum PSA was detected after RP.

UP.383

Second Primary Cancer after Radical Prostatectomy in Lebanese Men

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Introduction and Objective: Improved prostate cancer survival leads to longer follow-up and might contribute to increase risk of second primary malignancies (SPM). This study estimates the overall risk of

developing SPM among Lebanese men with prostate cancer who underwent radical prostatectomy.

Materials and Methods: We identified 406 patients who underwent radical prostatectomy in a Lebanese tertiary center (1998-2012). SIRs and 95%CI were calculated to analyze the risk of SPM.

Results: After 14 years of follow up, the incidence rate of SPM was 100.9 per 1000 person-years. The overall risk for men with prostate cancer to develop SPM is lower than the men in the general population (SIR= 0.19; 95% CI: 0.14-0.25). The reduction in risk was significant for all solid tumors including bladder cancer (Table 2).

UP.383, Table 1. Characteristics of the Prostate Cancer Patients Underwent RP, 1998-2012

	Total
	N=406 (%)
Median age, years	62
Median PSA	6.9
Median follow-up, months	108.9
Adjuvant radiation therapy	142(35)
SPM patients	
N=41	
Median age at diagnosis, years	66
Median preoperative PSA, ng/ml	4.62
PSA failure	11(27)
Pathologic stage	
T2	27(66)
T3	14(34)
Gleason score	
6	15(37)
3+4	19(46)
>8	7(17)
D'amico characteristics	
Low Risk	14(34%)
Intermediate Risk	16(39%)
High Risk	11(27%)
Adjuvant radiation therapy	12(29)

Conclusion: Patients with prostate cancer who underwent radical prostatectomy are at lower risk of developing SPM compared to the general population. Nevertheless, Urologists should take into consideration individual risk factors to counsel their patients for screening for SPM during their follow-up after prostate cancer treatment.

UP.384

A New Model of Care for Men with Emotional and Sexual Concerns after Robotic Surgery for Prostate Cancer (Moca)

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Introduction and Objectives: Prostate cancer is the most common cancer in men. One important side effect of robotic surgery is erectile dysfunction. Current literature demonstrates men undergoing surgery for prostate cancer have significant unmet needs including psychosexual care.

Materials and Methods: To develop a psychosexual pathway for men cured of prostate cancer post robotic radical prostatectomy. To assess mens' post operative psychosexual needs; to develop a psychosexual pathway for men post radical surgery for prostate cancer. Ethics research board, Heath research authority and Research development and innovation approval were gained. A participatory research approach with patient focus group and health care professional interviews was used to develop a bespoke psychosexual pathway.

Results: The patient focus group demonstrated a clear lack of psychosexual care post-surgery, but also highlighted themes for development of psychosexual care, a pathway to rehabilitate erectile dysfunction, and a tailor made approach to care. The healthcare professional interviews also highlighted this same need and the role for further input from secondary and primary care together.

Conclusions: This study demonstrated a large unmet need for psychosexual care in men with prostate cancer post-surgery. The findings will alter practice in psychosexual care and provide the foundation for guidance in the UK and across Europe for patients undergoing robotic surgery for prostate cancer.

UP.383, Table 2. Standardized Incidence Ratio of Patients with Prostate Cancer

SPM types	Cases	Incidence	ASR‡	SIR	SIR Davis et al.†	SIR Joung et al.†
All sites	N (%)	100.9*	225.7%	0.19 (0.14-0.25)	0.55 (0.53-0.56)	0.78(0.72-0.78)
Bladder Cancer	11 (27)	2.7%	34%	0.33 (0.17 -0.56)	0.76 (0.70-0.83)	1.55(1.09-1.45)
Lymphoma & Leukemia	9 (22)	2.2%	4.2%	0.64 (0.31-1.17)	0.84 (0.74-0.94)	0.9 (0.69-1.03)
Lung cancer	7 (17)	1.7%	31.8%	0.22 (0.10-0.44)	0.68 (0.63-0.73)	0.67(0.59-0.7)

ASR:Age standardized ratio.
SIR: Standardized incidence ratio.
* Incidence ratio per 1000 person-years.
† Incidence of SPM in prostate cancer patient underwent surgical treatment.
‡ASR for Lebanese men based on 2008 figures.

UP.385

Gleason 6 (3+3) Prostate Cancer: What Have We Done and What Are We Doing?

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Introduction and Objective: We intend to perform a time-series analysis of a hospital-based cohort of patients with Gleason 6 prostate cancers, regarding clinical and pathological features at diagnosis, treatment options and survival.

Materials and Methods: Data of 138 patients with a Gleason score 6 (3+3) prostate cancer on transrectal prostate biopsy, between 2000 and 2015, was analyzed. Patients were categorized in 2 groups according to the time of diagnosis: Group One (2000-2008) (n=96) and Group Two (2011-2015) (n=42). Groups were compared regarding age, PSA at diagnosis, TNM staging, European Association of Urology (EAU) prognosis groups, comorbidities (ASA score) and treatment options. Overall survival and prostate-cancer-specific survival were assessed.

Results: Group One presented a statistically significant higher PSA at diagnosis (8.2 vs. 5.2ng/mL), a higher proportion of active treatments and a trend towards a higher weight of high-risk disease. There were no differences regarding age, TNM stage and ASA score. Considering patients submitted to radical prostatectomy (n=59), Group One had a higher age (64.0 vs. 57.5 years) and PSA at diagnosis (8.0 vs. 5.8ng/mL). Patients submitted to external beam radiotherapy (EBRT) (n=32) were similar in both groups. Active surveillance (AS) was more frequent among Group Two, with a lower age and PSA at diagnosis, comparing with Group One. Men who underwent AS showed a 5-year cumulative risk to initiate an active treatment of 10%. The 10-year cumulative incidence of death from all causes was 19.8%, whereas the 10-year cumulative incidence of prostate cancer specific death was only 1.8%.

Conclusion: The therapeutic approach for patients with Gleason 6 (3+3) prostate cancer has dramatically changed in our institution. AS has become the first treatment choice for management of low-risk localized prostate cancer, whereas the number of radical treatments has significantly decreased. Finally, brachytherapy has emerged as an alternative treatment for these patients.

UP.386

Long-term outcomes in severe lower urinary tract symptoms in men undergoing robotic-assisted radical prostatectomy.

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Introduction and Objective: To address a major concern driving treatment intervention, we studied

UP.385, Table 1. Time-Series Cohort Descriptive Data

Study Variables	2001-2008	2011-2015	p-value	Total
Age (years)*	67.5 (63.0-72.5)	66.0 (61.0-72.0)	0.309 [α]	67.0 (62.0-72.0)
PSA at diagnosis (ng/mL)*	8.2 (6.2-13.3)	5.2 (4.0-8.1)	<0.001 [α]	7.7 (5.1-11.3)
T-stage¥				
T1a-T1c	30 (61.2)	17 (77.3)	0.386 [φ]	47 (66.2)
T2a-T2b	11 (22.5)	4 (26.7)		15 (21.1)
T2c	5 (10.2)	0 (0.0)		5 (7.0)
T3-T4	3 (6.1)	1 (4.6)		4 (5.6)
Missing data				67
N-Stage¥				
N0	22 (44.9)	8 (36.4)	0.501 [φ]	30 (42.3)
N1	0 (0.0)	0 (0.0)		0 (0.0)
Nx	27 (55.1)	14 (63.6)		41 (57.7)
Missing data				67
M-Stage¥				
M0	26 (53.1)	9 (40.9)	0.467 [φ]	35 (49.3)
M1	1 (2.0)	0 (0.0)		1 (1.4)
Mx	22 (44.9)	13 (59.1)		35 (49.3)
Missing data				67
EAU risk groups¥				
Low-risk	29 (43.3)	19 (73.1)	0.073 [φ]	48 (51.6)
Intermediate-risk	20 (29.9)	4 (15.4)		24 (25.8)
High-risk	15 (22.4)	2 (7.7)		17 (18.3)
Locally advanced	3 (4.5)	1 (3.9)		4 (4.3)
Missing data				45
First treatment¥				
Radical Prostatectomy	51 (57.3)	8 (19.5)	<0.001 [φ]	59 (45.4)
EBRT	25 (28.1)	7 (17.1)		32 (24.6)
Brachyterapy	0 (0.0)	8 (19.5)		8 (6.2)
Active Surveillance	3 (3.4)	17 (41.5)		20 (15.4)
ADT	10 (11.2)	1 (2.4)		11 (8.5)
Missing data				8
Comorbidities (ASA score)¥				
1	0 (0.0)	0 (0.0)	0.856 [φ]	0 (0.0)
2	58 (65.9)	28 (68.3)		86 (66.7)
3	25 (28.4)	10 (24.4)		35 (27.1)
4	5 (5.7)	3 (7.3)		8 (6.2)
5	0 (0.0)	0 (0.0)		0 (0.0)
Missing data				9

* median (Percentile 25-Percentile 75)

¥ n (%)

[α] comparison between continuous variables using Kruskal-Wallis test

[φ] comparison between categorical variables using chi square test

incontinence and urinary quality of life (QOL) before and after robotic-assisted radical prostatectomy (RARP). In men with severe lower urinary tract symptoms (LUTS), this is the first observational study analyzing short- and long-term urinary outcomes of RARP.

Materials and Methods: RARP was performed on 200 patients by 3 surgeons from 2014 to 2017. Men returned preoperative and postoperative self-reported IPSS, urinary QOL, and continence (pad usage) questionnaires, IIEF5. Men with preoperative severe LUTS (IPSS≥ 14; n = 53; 31%) were observed longitudinally for a mean of 4.0 years (range, 1.6-5.2 years) and were compared with men with mild-to-moderate LUTS (IPSS ≤ 13 69%).

Results: In men with severe LUTS, baseline average IPSS and QOL scores were 12.2 and 4.0, respectively. Long-term IPSS improved by 30% (3.4 points; P < .001); specifically 59% of patients had IPSS drop to <8, 35% of patients to 8-19, and 6% of patients remained at ≥ 20. The mean QOL scores declined from 4.0 to 2.0 (P < .05). Preoperatively, 72% patients had a poor QOL score of 4-6 compared with only 18% (P < .001) at long-term follow-up after RARP. Overall pad-free status was 80% vs 92%.

Conclusion: In men with severe LUTS, RARP significantly improved urinary symptoms and QOL scores with an overall pad-free status of 71%. Specifically, these men should be counseled that RARP confers a significant short- and long-term benefit with regard to relief of their obstructive and irritative symptoms.

UP.387

Clinical Outcome of Brachytherapy for Localized Prostate Cancer: Japanese163 Cases

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Introduction and Objective: In this study, we evaluated clinical outocome of I-125 brachytherapy for localized prostate cancer as monotherapy. Between December 2007 and December 2016, a total of 163 patients underwent I-125 brachytherapy for localized prostate cancer in our hospital.

Materials and Methods: Mean patient age was 69 years (range 42 to 82). We selected patients presented with low-risk disease: initial PSA <10 ng/ml, clinical stage < T2a, and Gleason score < 7. Patients with intermediate risk disease were also included on a case-to-case basis with initial PSA < 20 ng/ml, Gleason score 7 (basically 3+4), clinical stage T2b or T2c. All patients were treated with low-dose-rate permanent prostate brachytherapy (145Gy). Patients with prostate volume more than 35ml fundamentally received hormonal therapy until prostate volume become less 35ml before brachytherapy. Mean initial PSA was 6.7 ng/ml (range 3.3 to 15.5). Low risk group was 84patients (52%), Intermediate risk group was 79patients (48%). One hundred and thirty eight patients treated with loose seed, 25 patients used linked seed.Biochemical recurrence was defined according to the American Society for Radiation Oncology nadir+2.0ng/ml definition.

Results: Median follow-up was 5 years.Biochemical recurrence presented 3patients (2%), the 3 year and 5 year biochemical recurrence free survival were 97% and 97%. Other cause death occurred in one case, cancer death was not presented.

Conclusion: In this study, Brachytherapy achieved good rate of biochemical control in low and selected intermediate risk localized prostate cancer. Brachytherapy seems to be good choice of treatment for localized prostate cancer.

UP.388

Affecting Overall Satisfaction in Prostate Cancer Care

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Introduction and Objective: Information about how men with prostate cancer perceive their medical care and factors associated with their overall satisfaction with care (OSC) are scarce. Our objective is to assess OSC in men with low-risk prostate cancer, determine factors associated with OSC and whether these differ between treatments.

Materials and Methods: All Swedish men, 70 years or younger, diagnosed with low-risk prostate cancer in 2008 was invited to this survey (n=1720). In total, 1288 (74.9%) responded. A questionnaire with study-specific questions and EPIC-26 evaluated demographics, concurrent diseases, functional outcomes, experiences at diagnosis and at follow-up visits. One study specific question addressed OSC on a seven-point visual digital scale. Data was analysed using ordinal logistic regression, comparing highest versus lowest levels of exposure variables.

Results: High OSC (6 or 7 on the seven-point visual digital scale) was reported by 959 (74.5%) patients. Participation in decision-making (OR=3.85, CI=2.35-6.30), information given by medical personnel (OR=10.81, CI=7.74-15.08) and quality of information received (OR=7.84, CI=5.42-11.35) was associated with OSC. Higher functional outcome, evaluated by EPIC-26 was weakly associated with OSC (OR=1.34, CI=1.22-1.48). Nurse navigators improved OSC (OR=1.79, CI=1.42-2.25). We found no difference in OSC whether doctors or specialist nurses performed follow-up (OR=0.83, CI=0.65-1.05). There was no difference in variables associated with OSC between treatment groups. Patients who underwent active treatment reported higher OSC (OR=1.36, CI=1.08-1.70), participation in decision-making (OR=2.20, CI=1.72-2.81) and information about treatment (OR=1.78, CI=1.42-2.24) compared to patients in active surveillance.

Conclusion: Overall satisfaction in prostate cancer care is high. Our findings stress the responsibility health care providers have to provide high quality information and to facilitate patients' participation in decision-making. Further development of the nurse navigator role, e.g. during follow-up may improve OSC. There is room for improvement in participation in decision-making and information about treatment for men under active surveillance.

UP.389

The Study of Robot-Assisted Laparoscopic Radical Prostatectomy (RALP) for Patients with a History of Abdominal Surgery

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Introduction and Objective: We review the series of operations of robot-assisted laparoscopic radical prostatectomy(RALP) with patients who have history of abdominal surgery.

Materials and Methods: Between October 2013 and January 2017, a total of 154 patients underwent RALP. Mean patients age was 67 (range from 51 to 80), and 62 patients (40.3%) had history of abdominal surgery. The classification of those abdominal surgeries are appendectomy (41 cases), inguinal herniorrhaphy (9 cases), cholecystectomy (6 cases), gastrectomy (5 cases), and others. Some of these patients were performed more than one classification of surgeries. We compare patients who have history of abdominal surgery with patients who do not have such.

Results: Average port insertion time for patients without abdominal surgery was 52.70 minutes (range from 24 minutes to 131 minutes), and for patients with abdominal surgery was 62.27 minutes (range from 20 minutes to 115 minutes). Average console time for patients without abdominal surgery was 158.91 minutes (range from 87 minutes to 314 minutes), and for patients with abdominal surgery was 167.01 minutes (range from 95 minutes to 315 minutes). Complication rate for patients without abdominal surgery was 9.78%, and for patients with abdominal surgery was 6.46%. There was no significant difference between patients with/without history of abdominal surgery except for port insertion time (p value: 0.0010). No case required conversion to open surgery.

Conclusions: There was no significant difference between patients with/without history of abdominal surgery in terms of operation time, or complication rate. Therefore, we consider we could perform RALP safely to patients with abdominal surgery history.

UP.390

Salvage Open Radical Retropubic Prostatectomy for Recurrent Prostate Cancer Following MRI-Guided Transurethral Ultrasound Ablation (TULSA) of the Prostate: Feasibility and Efficacy

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Introduction and Objective: MRI-guided transurethral ultrasound ablation (TULSA) is a novel modality for minimally invasive whole gland ablation in patients with localised prostate cancer (PCa) (see Figure 1). We conducted a multicentre phase 1 study in Canada, Germany and USA showing TULSA to be feasible, safe and well tolerated. Treatment protocol mandated a safety margin of 3 mm within the prostate capsule, anticipating 10% untreated prostate. Of the 30 patients, 55% (16/29) had cancer on repeat biopsy, which was clinically significant in 31% (9/29). Six patients underwent salvage therapy. Here we report on our experience with the 4 salvage prostatectomies (SP) that were performed.

Materials and Methods: Prior to ablation, 3/4 patients were NCCN low risk and 1 was intermediate risk. Median age was 69. All underwent open retropubic SP within 24 months of TULSA.

Results: SP was technically feasible in all 4 men. A modified Lloyd-Davies position allowed rectal access for an assistants finger to guide the posterior dissection. Extensive dense fibrotic reaction of endopelvic and Denonvilliers fascia was characteristic. Mean operating times, blood loss, and length of stay were 210 minutes, 866 ml, and 3.5 days respectively. There were no perioperative complications. Whole-mount pathology sections showed 2 pT2b and 2 pT3a. Location of disease was compatible with persistent cancer mostly in the untreated peripheral safety region. Postoperative stress urinary incontinence was mild in two pts and moderate in one. All men had erectile dysfunction unresponsive to PDE5i. 2/4 pts had early PSA progression despite SP, requiring radiotherapy (RT) as further salvage. One man had PSA progression despite salvage RT.

Conclusions: SP is a salvage option if TULSA fails. Technical difficulty and morbidity are comparable to salvage RP following RT. Further trials with TULSA are underway with 1 mm safety margin, with possibly fewer patients needing salvage therapies.

UP.391

Long-Term Oncologic Outcomes of Focal Magnetic Resonance Guided Focused Ultrasound Treatment for Locally Confined Prostate Cancer

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Introduction and Objectives: Progress in different diagnostic and treatment modalities of prostate cancer (PCa) have strengthened support for the use of focal high-intensity focused ultrasound (HIFU). However, important questions remain regarding candidate selection, treatment, and outcomes. We assessed long-term oncologic outcomes of focal HIFU in a small single-center cohort of low-risk PCa patients.

Materials and Methods: Twenty-two patients with low risk PCa (PSA<10 ng/ml, Gleason score less than 7, or clinical stage cT2b and less) were underwent for focal HIFU ablation (ExAblate 2100 for a prostate device, InSightec) with GE MRI suite and endorectal FUS transducer from March 2009 to January 2010. Among them, 8 patients were available for long term (a median time – 7.3 years) follow-up. Desired treatment target (Region of Treatment, ROT) and vulnerable structures (nerve vascular bundles) were marked on acquired magnetic resonance guided (MRg) planning images. Pre- and post-reatment strategy, rate and follow-up schedule was designed at PCa001 and PCa002 studies and described previously; prospective parts of these studies was closed after 6-month follow up.

Results: The average patient's age 64 (49-73) years. Median pre-HIFU PSA level and post-HIFU PSA nadir was 7.6 and 3.9 ng/ml, respectively. Biochemical recurrence (BCR, defined as nadir + 2 ng/ml) was observed in 7 (87.5%) cases. Medium time to progression was 18 (3-32) months. In 4 (50%) cases local progression was confirmed by prostate biopsy and after metastatic process exclusion salvage radical prostatectomy (RPE). Generally, surgery after ablation was severe than in naive patients; however, operative characteristics (operative time, blood loss, hospital stay) were comparable with historical cohort. During follow-up

time, systemic treatment (hormonal therapy) was prescribed for 5 patients, as a result of distant metastatic progression after prostatectomy (2) and without secondary local treatment (3). Cancer-specific survival (CSS) and overall survival (OS) was both 100%.

Conclusions: Despite acceptable results of survival, we found that almost all patients are progressed during follow-up. These data are in contrast with previously published data. However, patients in our series were younger than in historical cohort. We concluded that the use of focal high-intensity focused ultrasound in selected patients represents a strategy combining benefit of active surveillance and radical treatment in patients with low risk PCa. However, this concept should be evaluated in large prospective controlled studies.

UP.392

MRI-Guided Transurethral Ultrasound Ablation for Localized Prostate Cancer: Prospective Phase I Clinical Trial with 24 Month Follow-Up

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Introduction and Objectives: MRI-guided transurethral ultrasound ablation (MRI-TULSA) is a novel minimally invasive treatment modality for localized prostate cancer (PCa). A transurethral ultrasound applicator generates a precise image-guided treatment, under the control of real-time MRI thermometry feedback control. The objective of this phase I clinical trial was to determine clinical safety and feasibility of MRI-TULSA for whole-gland prostate ablation as a primary treatment for localized PCa.

Materials and Methods: A prospective multi-centre, single-arm trial was undertaken at 3 sites in Canada, Germany and USA, enrolling patients between March 2013 and March 2014. Inclusion criteria were: age ≥65 years; biopsy-proven PCa (cT1c-T2a) with no previous treatment; PSA ≤10 ng/ml; Gleason score 3+3 (3+4 in Canada only); Prostate size ≤5 cm sagittal length and ≤6 cm axial diameter; Eligible for MRI and general anesthesia. The protocol specified a safety margin of 3 mm from the gland periphery, leaving approximately 10% untreated gland. Primary endpoints were safety and feasibility, evaluated at 1 year. Secondary endpoints were efficacy, based on 1 and 3 year biopsies and PSA response, as well as impact on voiding, erectile, and bowel function scores.

Results: Thirty patients were treated. No intraoperative complications, or postoperative incontinence, rectal injury, or fistula occurred. All were discharged on or before post-operative day one. One grade 3 adverse event occurred (epididymitis requiring IV antibiotics). Other adverse events were: hematuria (grade 1 in 13 patients, grade 2 in 2 patients); urinary retention (grade 1 in 3 patients, grade 2 in 5 patients). Heating of the prostatic tissue conformed well to the planned treatment area, and predicted area of cell kill correlated well with non-perfusion on immediate contrast-enhanced MRI. 16/29 patients (55%) had positive 12 month biopsy, with 9/29 (31%) having clinically significant cancer. Median IPSS and IIEF-15 scores were 8/35 and 13/30 at baseline, and 8/35 and 12/30 at 24 months, respectively.

Conclusion: MRI-TULSA provides detailed planning, real-time thermal dosimetry, and precise feedback control. It is a safe and well-tolerated procedure for whole-gland ablation of localized PCa. A larger multicenter TULSA-PRO Ablation Clinical Trial (TACT) with reduced safety margins and higher treatment temperature is currently underway.

UP.393

The Association between the Outcomes of Extraperitoneal Laparoscopic Radical Prostatectomy and the Anthropometric Measurements of the Prostate Magnetic Resonance Imaging

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Introduction and Objective: The aim of this study was to determine the association between the anthropometric measurements of the magnetic resonance imaging (MRI) and perioperative outcomes of extraperitoneal laparoscopic radical prostatectomy (ELRP).

Materials and Methods: From 2008 to June 2016, 86 patients with ELRP were performed preoperative MRI and underwent ELRP for localized prostate cancer by a single urologist (SP). For the anthropometric measurements of MRI, a Two single radiologists (SA and TV) measured prostatic volume, angle between pubic bone and prostate, depth of prostatic apex, curve distance, the angle between the prostate and pubic bone, abdominal wall thickness, work space AP and transverse during surgery, protrusion of the prostate into the bladder, retropubic fat and peri-prostatic plexus diameter. We analyzed the associations between anthropometric measurements and patient demographics, operative time, estimated blood loss, and positive surgical margins (PSMs), complication rate, and postoperative hospitalization.

Results: The mean patient age was 69.61 ± 8.30 years. The median of operating time and blood loss was 2.30 (IQR = 2.69; (Q3-Q1) = 6.86-4.18) hours and 725.30 (600; 900-300) ml, respectively. A total of post-surgical complication rate was 1.16 %. The median hospital stay was 6.50 days (4; 9-5). The pathological stage was T2 and T3 was 45.74% and 34.04%, respectively. The rate of PSMs was 18.09% (pT2 and pT3; 6.38% and 9.57%). For the association between the anthropometric measurements of the MRI and perioperative outcomes of ELRP, the angles between pubic bone and prostate gland (angle 1 & 2), were significantly associated with operative time and hospital stay, respectively ($p < 0.05$). There are no any correlation between the pelvimetry and positive surgical margin.

Conclusions: The findings of the present study suggest that anthropometric measurements of the MRI were related to operative difficulties in ELRP. This study confirmed MRI planning is the keys to preventing complications of ELRP.

UP.394

Adherence to Active Surveillance Protocols for Low-Risk Prostate Cancer: Results of the Movember Foundation's Global Action Plan Prostate Cancer Active Surveillance (GAP3) Initiative

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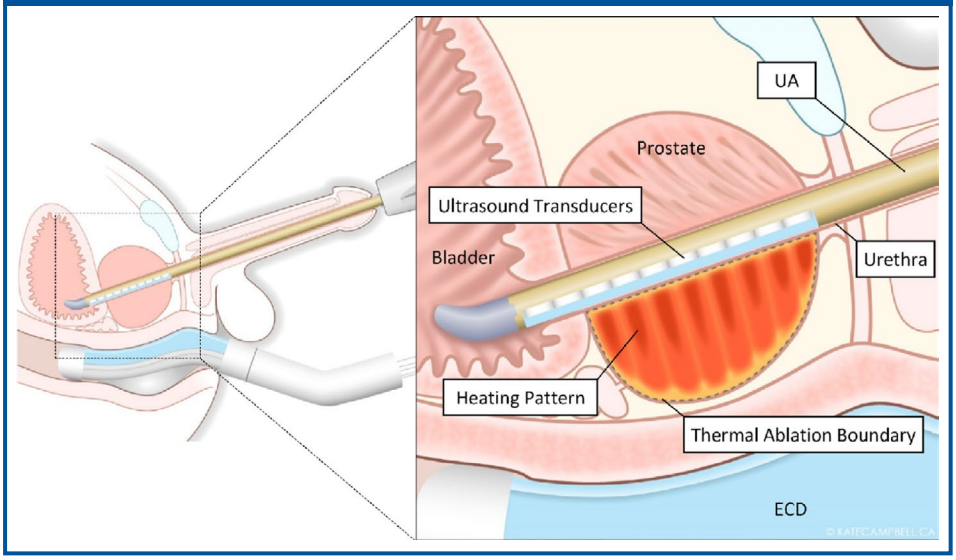
Introduction and Objective: The concept of active surveillance (AS) of low-risk prostate cancer (PCa) is to treat with curative intent when disease progression occurs. The key to success is selecting suitable PCa patients and to make sure they are monitored regularly. To assist both clinicians and patients, various institution-specific protocols have been developed. To further refine and standardize these protocols worldwide it is crucial not to only study the clinical outcomes but also identify adherence to these protocols.

Materials and Methods: The Movember Foundations' GAP3 cohort includes data of as many as 14,024 patients from 25 established AS cohorts worldwide. Adherence to inclusion criteria of the different AS protocols was assessed by comparing institution-specific recommendations to real-data based results using descriptive statistics.

Results: Most protocols recommend clinical risk stratification based on patients' age (n=22), tumour stage (n=21), serum PSA level (n=21) and Gleason score (n=24) as the primary means of refining patient selection. All institutions adhered to the age criterion. However, (very) small deviations were found for five centers regarding stage (mainly T2 instead of T1) and for 17 centers regarding biopsy GS (mainly 3+4 instead of <=6). In total, five institutions adhered to all recommended eligibility criteria. Following initiation of AS, most protocols recommend serial measurement of serum PSA (n=24) and surveillance biopsies in order to identify pathological progression (n=23). Compliance to these follow-up protocols will be presented.

Conclusion: Within each of the 25 institutions within the GAP3 cohort adherence to self-formulated inclusion criteria was good. The current findings will need to be further explored and taken into account when developing a realistic evidence-based AS protocol.

UP.390, Figure 1. Schematic Representation of Magnetic Resonance Imaging-Guided Transurethral Ultrasound Ablation of The Prostate. ECD = Endorectal Cooling Device; UA = Ultrasound Applicator



UP.395

Tumor Lysis Syndrome Following Cabazitaxel for Metastatic Castration Resistant Prostate Cancer (Mcrpc): A Case Report and Review of the Literature

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Introduction and Objective: Tumor lysis syndrome(TLS) is a rare and potentially fatal complication of oncologic treatments. It is characterized by biochemical changes due to rapid tumor lysis of malignant cells, usually after chemotherapy for hematologic malignancies. We report a case of TLS occurred after cabazitaxel therapy for mCRPC. To the best our knowledge, TLS has never been reported after cabazitaxel therapy.

Materials and Methods: We present a case of 77 year-old man developing grade II clinical TLS after a single dose of cabazitaxel (20 mg/m2) for mCRPC. He had received the androgen deprivation therapy but he had become CRPC after 7 months. Thereafter, he had received 13 cycles of 3-weekly docetaxel (70 mg/m2) followed by enzalutamide for 13 months at the previous institution. The computed tomography showed poor defined prostate tumor, multiple liver metastases and pelvic lymphadenopathy, and bone scan showed multiple bone metastasis(EOD2).

Results: Cabazitaxel with dexamethasone 1.0 mg once daily was initiated. He received pegfilgrastim (6 mg) subcutaneously on day 2, as the primary prophylaxis for neutropenia. On day 3, he had a fever of 37.8 °C and severe hypotension. Laboratory tests revealed the renal and liver dysfunction (serum creatinine 2.85 mg/dl, potassium 5.7 mmol/l, phosphorus 2.8 mg/dl, UA 11.3 mg/dl, Ca 8.2mmol/l, LDH 2992 U/l, AST 802 IU/l, ALT 572 IU/l) and severe anemia (hemoglobin 6.1 g/dl). Then He was diagnosed as laboratory and clinical TLS. He was admitted in the intensive care unit (ICU) and treated with hydration therapy (3000ml/day) and the correction of hyperuricemia with recombinant uricolytic agent (rasburicase). After that, UA and electrolyte abnormalities almost resolved after 3 days. He was recovered, out of the ICU on day 6, and discharged from the hospital on day 14. However, he re-hospitalized to our department for severe pain and dyspnea eight days after discharge and died of multiple organ failures in the next day.

Conclusion: It is utmost important to assess risk factors for TLS and to perform active prevention to avoid fatal outcomes. It might be beneficial to use rasburicase in patients with established TLS.

UP.396

External Validation of the Cancer of the Prostate Risk Assessment-S Score in Arab Men Underwent Radical Prostatectomy

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Introduction and Objective: The University of California San Francisco Cancer of the Prostate Risk Assessment-S score (CAPRA-S score) is a unique tool that combines preoperative PSA and pathological parameters to predict biochemical recurrence (BCR) after radical prostatectomy. We ought to validate this tool in a Middle Eastern prostate cancer population.

Materials and Methods: Using the American University of Beirut Medical Center Prostate cancer database (1998-2015), we identified 196 men had complete data to calculate a CAPRA-S Score. Kaplan-Meier curves were plotted and compared across the categories of the CAPRA-S score, using the log-rank test. Cox regression models were carried out to determine the ability of the CAPRA-S score (continuous and categorical) in predicting PSA failure. Hazard ratios (HR) and their 95% confidence intervals (CI) were reported. The ability of the cox models to discriminate between PSA failures and non-failures was measured by the Harrell's c statistic. Statistical analyses were conducted using SPSS version 24.0 and STATA version 13.1 for Windows and a p-value <0.05 was considered significant.

Results: The mean age was 62 years (SD = 6.01), and 34.9% of the patients developed BCR. The percentage of patients in our cohort with a CAPRA-S score of 0–2, 3–5, and 6–10 (low, intermediate, and high risk) was 34.7%, 33.2%, and 32.1%, respectively. The 5 years Biochemical recurrence free survival rate for low, intermediate, and high risk was 92%, 80%, and 69% respectively. The CAPRA-S c-index for BCR was 0.63 in this validation set

Conclusion: In this study, the CAPRA-S score was capable to predict BCR after radical prostatectomy with a c-index of 0.63. This is the first reported study to validate this tool in a population from the Middle East. The low perforance of CAPRA-S in predicting BCR in our population may be attributed to the fact that 30% of cohort is high risk , adding to that the small sample size and retrospective nature of the study.

UP.397

New Semiauthomatic Laparoscopic Suture System for Urethro-Vesical Anastomosis

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Introduction and Objective: Radical prostatectomy is a challenging operation demanding a high level of surgical expertise and experience. One of the technically demanding aspects of this surgery is the urethrovesical anastomosis. To describe a new device for facilitating the urethrovesical anastomosis at the time of laparoscopic radical prostatectomy

Materials and Methods: We have designed a new device to perform the urethrovesical anastomosis in a semiauthomatic way. The set include a 27F cystoscope to facilitate the placement and enhance the quality of 4 double urethrovesical sutures. Stitches are placed with new device able to change both suture needles simultaneously from one to the other jaw introduced through a 12 mm laparoscopic trocar. All 4 sutures are placed at 6, 3, 9 and 12 o'clock position. Knots are performed extracoporally and moved down with a pusher.

Results: Performed sutures with plastic and animal models showed that anastomosis were easy to do and were allways symetric placed. Moreover, stitches achieve an excellent aproximation of urethral and bladder mucosa. Extracorporeal knot was easy to perform and move down with a laparoscopic pusher. Average time was less than 5 minutes. A double running suture with barbed unidirectional sutures is the most used system to perform urethrovesical anastomosis at the radical laparoscopic prostatectomy. The average time for this anastomosis is 27 minutes (range 14 to 80). Technical results depend on surgeons skills and experience. A semiauthomatic suture system may help to perform this anastomosis in a more standardized way and consuming less time.

Conclusion: We think that this new suture set should be considered an addition to the presently available armamentarium used to make the urethrovesical anastomosis technically easier and more precise.

UP.398

Risk Prediction Model for Prostate Cancer in a Korean Population

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Introduction and Objective: The role of PSA-based screening for prostate cancer is still controversial. Prostate cancer in Korea has different biological characteristics, compared to Western populations. Potential risk factors for prostate cancer in Korea were evaluated with the aim of developing a risk prediction model for prostate cancer incidence.

Materials and Methods: Between 1996 and 1997, lifestyle information was assessed via physical examination and questionnaires in 1,179,172 Korean men free of cancer at baseline. A survival prediction model was developed using the Cox proportional hazards model from an 8 year of follow-up. The model's performance was evaluated using the C-statistic and Hosmer-Lemeshow type X2-statistic.

Results: The risk prediction model included Age, height, BMI, glucose, family history of any cancer, frequency of meat consumption, alcohol consumption, smoking status, and physical activity. The model showed excellent performance (C statistic = 0.887, 95% CI = 0.879–0.895). Notably, no alcohol consumption and never smoking were also associated with an elevated prostate cancer risk, compared to heavy alcohol consumption (≥25 g per day, HR: 0.78, P value <0.001) and current smoking (HR: 0.73, P value <0.001), respectively

Conclusion: This is the first study to provide an individualized risk prediction model for prostate cancer in an Asian population with very good model performance. This model can be used for identifying high risk groups for prostate cancer and applying cancer screening and prevention strategies in Korea as well as other Asian populations.

UP.399

Prevalence and Survival Prognosis of Prostate Cancer in Patients with End-Stage Renal Disease: A Retrospective Study Based on the Korea National Database (2003–2010)

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Introduction and Objective: To analyze the prevalence and survival prognosis of patients with prostate cancer (PC) who were previously diagnosed with end-stage renal disease (ESRD), and to determine the risk factors of overall survival (OS) between those with and without ESRD.

Materials and Methods: Using the nationwide Korean Health Insurance System and Korean Central Cancer Registry data based on the International Classification of Disease (ICD) and the Surveillance, Epidemiology, and End Results (SEER) staging for PC, 38 925 patients with PC between 2002 and 2011 were selected. Diagnostic ICD codes for diabetes, renal failure, dialysis, and kidney transplantation were used to select patients with ESRD before PC was diagnosed. The prevalence and prognostic risk factors of OS were statistically analyzed with a statistical significance of p-value <0.05.

Results: In this study, 3945 (10.1%) patients with ESRD were diagnosed as having PC, which included 3.9% on dialysis (N=152) and 0.2% with kidney transplantation (N=10) (D-TPL group), and of those, 3783 (95.9%) had neither dialysis nor transplantation (non-D-TPL ESRD group). Overall, 9406 (24.2%) patients died, including 697 (7.4%) PC-specific deaths. The median respective OS/PC-specific survival time/5-year survival rate for the non-ESRD (37.4/21.1/80.1%), non-D-TPL ESRD (30.5/17.8/64.5%), dialysis ESRD (8.9/11.4/59.1%), and transplantation ESRD (36.9/not applicable/100%) groups were significantly different (p<0.001). Multivariate analysis showed that the presence of ESRD, age, body mass index, SEER stage (HR 1.277–5.052), no treatment within 6 months after diagnosis, no surgery, no chemotherapy, no radiotherapy, no hormonal therapy, non-adenocarcinoma pathology, and CGI grade 2 were significant risk factors of OS (p<0.001, all).

Conclusion: With 10.1% of nationwide prevalence of ESRD-PC, the presence of ESRD was a significant survival factor along with other significant clinic pathological factors.

UP.400

Ninjurin1, which is Up-Regulated in Circulating Prostate Tumor Cell, Plays a Critical Role in Prostate Cancer Cell Motility

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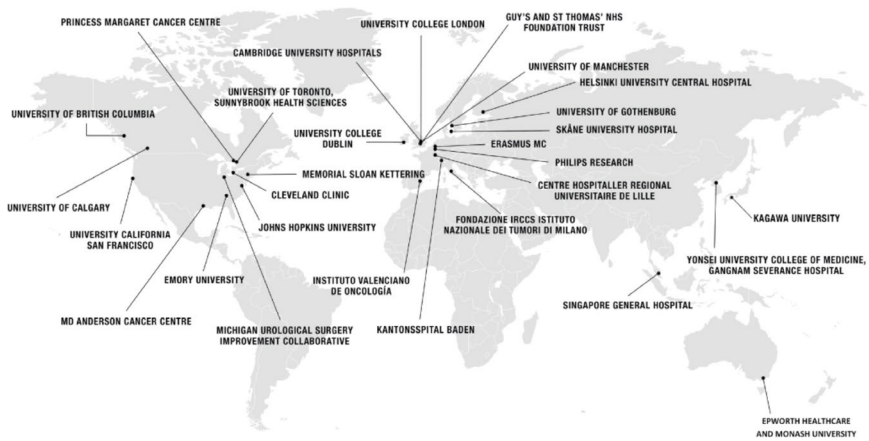
UP.394, Figure 1. GAP3 Participants



***On behalf of The Movember Foundation's Global Action Plan Prostate Cancer Active Surveillance (GAP3) consortium**

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Introduction and Objective: Ninjurin1 (nerve injury-induced protein 1) as a 17KDa membrane protein, which is known to be important in macrophage movement, were found to be highly expressed in all circulating tumor cells (CTCs) obtained from prostate cancer patients with localized tumors. Since CTCs are expected to initiate eventual distant metastasis, we explored whether Ninjurin1 would contribute to the motility of metastatic prostate cancer cells.

Materials and Methods: For determination of Ninjurin1 involvement during cell movement, small interfering RNA (siRNA) eliminating Ninjurin1 transcripts were employed.

Results: Small interfering RNA (siRNA) eliminating Ninjurin1 transcripts resulted in the great reduction of *in vitro* migration and invasion of DU145 and PC3 cells. Next, neutralizing antibodies against Ninjurin1 effectively blocked the *in vitro* cell mobility. In contrast, metastatic prostate cancer cells infected with adenovirus harboring Ninjurin1 expression cassette under CMV promoter exhibited the enhanced mobility.

Conclusion: These results suggest that Ninjurin1 proteins expressed on CTC membrane seem to play an important role for better motility in blood.

UP.401

Does [-2] Pro-Prostate Specific Antigen Meet the Criteria to Justify its Inclusion in the Clinical Decision Making Process for Prostate Biopsy?

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Introduction and Objective: To assess if [-2] pro-prostate specific antigen meet criteria to justify its inclusion in a predictive model of prostate cancer diagnosis and in the clinical decision making process.

Materials and Methods: One hundred seventy-two men with total prostate-specific antigen (tPSA) of 2 to10 ng/ml underwent measurement of free PSA (fPSA) and [-2] pro-prostate specific antigen (p2PSA) before prostate biopsy in the setting of an observational and prospective study. From these, the Prostate Health Index (PHI) was calculated. Clinical and analytical predictive models were created incorporating PHI .Receptor operative characteristics (ROC) curves, Logistic regression, calibration plots, scatter plots and decision curve analysis were performed to achieve clinical utility of PHI.

Results: 72/172 (42%) men were diagnosed of prostate cancer and 33/72 (46%) were diagnosed with high grade disease. PHI score was the most predictive of biopsy outcomes in terms of discriminative ability (AUC=0.79) and added a gain in predictive accuracy of 17%. All models that incorporated PHI worked better in terms of calibration close to 45º on the slope. In the decision curve analysis for the midrange threshold probabilities between 20 and 45%, the model with PHI was superior to other models with the best benefit between 30 to 35% threshold probability, avoiding 82 biopsies, losing only 16 tumors and 7 high grade tumors (figure 1a and 1b and table 1).

Conclusions: PHI score is a more discriminant biomarker, has superior calibration and superior net benefit and provide a higher rate of biopsies avoided thus, it can be useful to make a more informed decision in each patient.

UP.402

Does Ki-67 Expression at the Margin Influence Biochemical Recurrence after Radical Prostatectomy?

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Introduction and Objective: Positive surgical margin (PSM) is considered an adverse prognostic feature that can predict biochemical recurrence (BCR). Many attempts to stratify PSM based on linear length, Gleason score, location and number have failed to add to predictive models using margin status alone. Yet no studies have examined the impact of Ki-67 expression at the margin on BCR. We evaluated the prognostic significance of Ki-67 expression at the margin using multiple methods of analysis accounting for patients who received adjuvant therapy.

Materials and Methods: Immunohistochemical staining for Ki-67 was done on prostatectomy specimens from 117 patients who had a positive surgical margin. Patients were dichotomized based on Ki-67 expression into three groups. Group 1 with no Ki-67 expression, Group 2 with Ki-67 ≤2 %, and Group 3 with Ki-67 ≥3%. To eliminate the impact of the adjuvant treatment (AT) on the outcome, data were analyzed by the Cox proportional hazards in which AT was Considered as a time-dependent covariate.

Results: See table.

Conclusion: Higher Ki67 expression at the surgical margin doesn't correlate with biochemical recurrence in patients with positive surgical margins following radical prostatectomy. This cost effective and simple marker can be an additional tool to determine the optimal care in this subset of patients.

UP.403

Dynamic Alteration of Androgen Receptor Amplification Status Detected by Ctdna during Treatment of Castration-Resistant Prostate Cancer

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Introduction and Objective: Recent development of potent androgen receptor (AR) pathway inhibitors and novel taxanes has complicated the treatment of castration-resistant prostate cancer (CRPC). Analysis of circulating tumor DNA (ctDNA) is emerging as a novel non-invasive way to detect genetic aberrations in cancer patients. AR amplification has been reported to be one of the mechanisms leading to resistance to AR pathway inhibition. Here we established a method to reliably detect AR amplification using digital droplet PCR (ddPCR) and analyzed AR amplification status during various treatments for CRPC.

Materials and Methods: ctDNA was collected from plasma of 75 CRPC patients under various treatments. AR copy number was analyzed using QuantStudio 3D Digital PCR® system with RnaseP as an internal control. Detection of AR amplification was first tested using VCaP (positive control) and LNCaP (negative control) cell line genomic DNA (gDNA), and ctDNA from mouse xenografted with each cell line. Next, AR amplification status was compared between tissue and ctDNA in 6 CRPC patients. Finally, ctDNA from 75 CRPC patients were tested for AR amplification. In 25 patients, AR amplification was tested multiple times during treatment to track changes of the amplification status.

Results: AR amplification was detected in VCaP gDNA and ctDNA from mouse xenografted with VCaP, but not in LNCaP gDNA or mouse xenografted with LNCaP. Five out of the six CRPC cases with matched tissue-ctDNA samples showed concordant AR amplification status. ctDNA concentration in CRPC patients (9.6ng/ml, 2.84-1464) was significantly higher than that from healthy controls (6.2ng/ml, 3.02-12.96). Of the 75 CRPC patients, 27 (36%) showed AR amplification. Of the 17 patients who were initially negative for AR amplification, 12 subsequently showed AR amplification at the time of drug resistance. In one case, negative conversion of AR amplification during treatment with Cabazitaxel was observed, which later again turned positive at disease progression.

Conclusion: Dynamic change of AR amplification status in ctDNA is observed in CRPC patients during treatment, suggesting that AR amplification could be a potential biomarker to guide precision medicine for CRPC.

UP.404

Does Inflammation Play a Role in Prostate Carcinogenesis? A Prospective Trial

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Introduction and Objective: Inflammation is known to play a role in a fifth of all human cancers. There is divided evidence in correlating prostatic inflammation to cancer. Various concepts including prostatic inflammatory atrophy and inflammasomes have been gaining popularity. In this study, we analyse patients with at least 8 years clinical follow-up who had initial benign prostate biopsy.

Materials and Methods: A prospective observational cohort study was started in 2007 on consecutive patients who underwent standard transrectal ultrasound-guided prostate biopsy to evaluate for potential prostate cancer. Standard immunohistochemistry of prostate biopsy cores and histological inflammation were recorded. Clinico-pathological data were analysed, including routine clinical follow-up with serum prostate specific antigen (PSA) levels, use of Aspirin

and histology of all subsequent repeat prostate biopsies. Hardcopy and nationwide centralised electronic health record databases were used to retrieve data. STATA 13 (Stata Corp, College Station, TX, USA) was used for statistical analysis.

Results: Out of 104 consecutive patients who were prospectively recruited, 3 patients were lost-to-follow up. The remaining 101 patients with at least 8 years clinical follow-up were analysed. They had mean age of 65.1 years, median serum PSA 7.7 ug/L (median IQR 5.6-15) and average body mass index (BMI) of 24.2. Their racial ethnicity was 92 (88.5%) Chinese, 7 (6.7%) Malays, and 2 (1.9%) Indians. Initial prostate biopsy showed 23 patients with prostate cancer (22.8%). In the remaining 78 patients with benign prostate pathology, 53 of them (67.9%) had concurrent prostate inflammation. Benign prostate histology without inflammation resulted in more repeat biopsies (p=0.004) and more likelihood to detect prostate cancer on further repeat biopsies (p=0.014). Use of aspirin (p=0.326), racial groups (p=0.101) and BMI (p=0.104) did not show any significant prediction for future prostate cancer. Among those with benign prostate histology with histological inflammation, 10 (18.9%) were acute, 36 (67.9%) were chronic, and 7 (13.2%) were acute-on-chronic inflammation and had no significant difference in future prostate cancer detection between them (p=0.097). Among the benign group, inflammation did not lead to any increase in transurethral resection of prostate (p=0.301). In the 53 patients with initial prostatic inflammation, only 4 patients (7.5%) had any lower urinary tract symptoms at presentation, and none of them developed prostate cancer.

Conclusions: In our cohort, prostatic inflammation was associated with lesser cancer development as compared to benign non-inflamed prostates. Only 7.5% of the patients with prostatic inflammation were symptomatic and none of them progressed to have cancer. Type of inflammation, BMI and intake of aspirin did not show any significant difference in future cancer progression over the 8 years of our follow up.

UP.405

Resection PSA Density (Rpsad) Correlates with Overall Survival in Men Diagnosed with Incidental Prostate Cancer after Transurethral Resection of Prostate (TURP) Treated with Observation

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Introduction and Objective: Incidental Prostate Cancer (IPCa) is detected in 4-16% of patients undergoing TURP either for bladder outlet obstruction or suspected BPH. The vast majority of patients are treated with observation. Nevertheless, the optimal management strategy remains unclear as there is currently no reliable predictive marker for the presence or absence of significant residual disease. Currently, evidence is lacking as to the potential impact of PSA or its derivatives post TURP and their utility as a prognostic marker for IPCa. In this study, we explore post-resection PSA Density after TURP and correlate it to overall survival. The objective is to determine the utility of rPSAD after TURP in predicting overall survival in men with IPCa treated with Observation.

Materials and Methods: We reviewed the histology of 2567 TURPs performed at our institution over a 17-year period from January 1999 to February 2016. Of these, 142 (6%) were diagnosed with IPCa. Variables collected include PSA before and 12 weeks after TURP, resection weight, T-stage, Gleason score and overall survival. Resection PSA Density is defined as the quotient of the difference between pre and post TURP PSA and resection weight (ng/mL/g). Time to follow-up was from date of TURP to last out-patient clinic review or death. Data analysis was with Chi-Square and spearman correlation on SPSS.

Results: Of the 142 IPCa, 75 (53%) and 67 (47%) were T1a and T1b respectively; Gleason score 6 or less was found in 105 (74%) and Gleason 7-10 in 37 (26%). Median pre and post TURP PSA were 6.7(0.1-64) and 1.9(0.1-67) respectively. Mean rPSAD was 0.6(0.1-11). 102 patients were observed, 21 received EBRT, 12 LHRH and 7 prostatectomy. After median follow-up of 64 months(4-205), 63 died [T1a-27(43%), T1b-36 (57%)] giving an overall survival of 56%. Of 102 patients observed, 92 experienced PSA drop. Of these, 40 (43%) died after mean time of 55 months. At rPSAD cut-off of 0.6ng/mL/g, the proportion of dead patients was 68% compared to 32% with rPSAD >0.6ng/mL/g (p=0.008).

Conclusion: rPSAD is a potentially useful predictor of adverse outcomes in patients diagnosed with IPCa after TURP. However, more studies are required to validate our observation.

UP.406

Serum Selenium Level and Prostate Cancer: A Case-Control Study

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Introduction and Objective: Selenium is a potential chemopreventive agent against prostate cancer. This study sought to evaluate and compare the serum selenium level in men with newly diagnosed prostate cancer and noncancerous patients.

Materials and Methods: Between 2005 and 2006, this prospective case-control study was performed on patients referred to Sina and Imam University hospitals, Tehran, Iran; it included 62 men with clinicopathologically confirmed diagnosis of prostate cancer (case group) and 68 men with no detectable prostate cancer [normal digital rectal examination and prostate-specific antigen (PSA) level] or any other malignant disease (control group). The serum selenium level was assessed using Zeeman graphite furnace atomic absorption spectrometer (Varian Company, Australia).

Results: The mean serum selenium level in the case and control group was 66.3 ± 17.7 µg/l and 77.5 ± 22.5 µg/l, respectively (P = 0.002). Serum selenium was inversely associated with prostate cancer risk. After adjustment for age, body mass index (BMI), and smoking, the odds ratio was 0.16 and 95% confidence intervals were 0.06 to 0.47 (P trendq = 0.001) comparing the highest with the lowest tertile (≥89.3 µg/l). No correlation was observed between serum selenium level and age, BMI, or PSA level.

Conclusion: In conclusion, serum selenium levels in prostate cancer cases were lower than in controls, which supports the hypothesis that selenium may protect against prostate cancer.

UP.407

Nerve-Sparing Cryoablation for the Treatment of Primary Prostate Cancer: the Preliminary Report

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Introduction and Objective: To present a pilot study in which 20 patients treated with nerve-sparing cryoablation were followed for up to 5.5 years.

Materials and Methods: One neurovascular bundle (NVB) was spared on the side opposite the positive biopsy, and two NVBs were spared when indicated and possible. Just before the start of freezing, a 22-gauge spinal needle was placed into Denonvilliers fascia using a transperineal route, and normal saline was injected to separate the rectum from the prostate. Combined hormone therapy was stopped in all patients after cryoablation when it was used. The prostate-specific antigen (PSA) level was sampled every 3 months for the first 2 years and then every 6 months thereafter. Patients were considered to have a stable

UP.401, Table 1. Net Benefit, Interventions Avoided, Missed Cancers and Missed Gleason ≥ 7 for Model 4

TP (%)	Net Benefit		Difference Net benefit Model 4	Reduction in biopsies (n)	Missed cancers (n)	Missed Gleason ≥ 7 (n)
	Treat all	Model 4				
20	0.27	0.30	0.03	28	2	0
25	0.22	0.25	0.03	40	4	1
30	0.17	0.26	0.09	47	6	2
35	0.11	0.26	0.15	68	12	2
40	0.03	0.24	0.20	82	16	5
45	-0.06	0.21	0.25	84	21	7

TP= threshold probability Model 4= tPSA plus fPSA plus %fPSA plus PHI

UP.401, Figure 1.

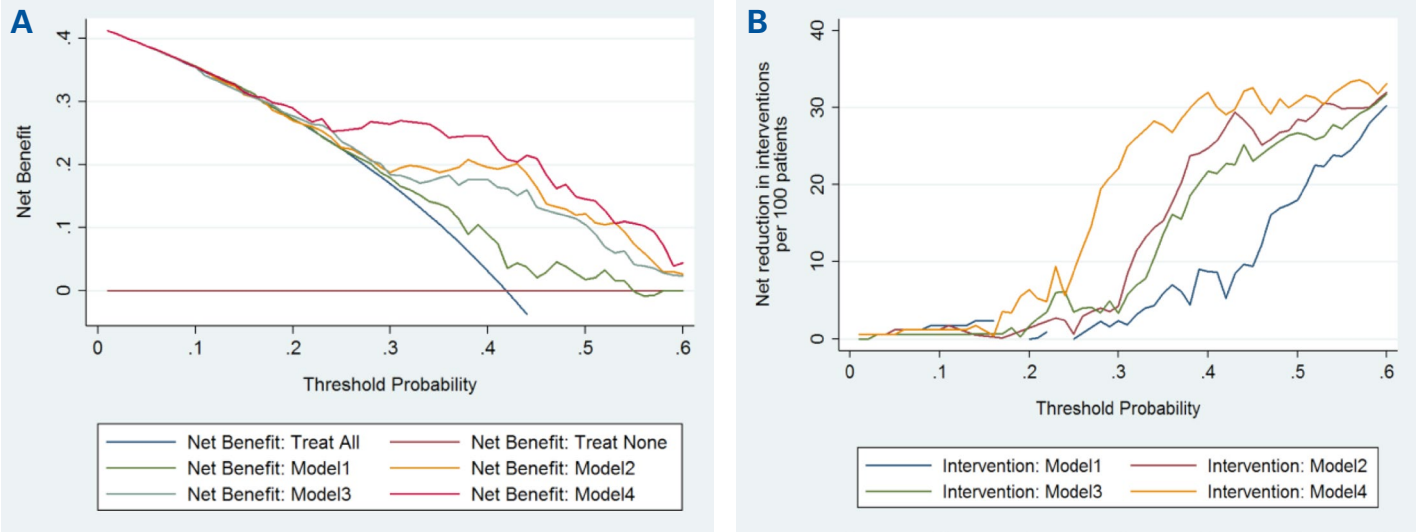

Figure 1a and Figure 1b: Decision curve analysis for prediction of net benefit (a) and for prediction of interventions avoided. Decision curve analysis of the effect of prediction models on the detection of prostate cancer. The net benefit is plotted against various threshold probabilities. Model 1 is a basic model that includes total prostate-specific antigen (tPSA), free prostate-specific antigen (fPSA), and percentage of fPSA to tPSA. Model 2 is a basic model that includes all the factors in model 1 plus [-2]proPSA (p2PSA). Model 3 is a basic model that includes all the factors in Model 1 plus the percentage of p2PSA to fPSA. Model 4 is a basic model that includes all the factors in Model 1 plus Prostate Health Index.

PSA if they had two consecutive PSA measurements without a rise.

Results: Between 2008 and 2016, 20 patients underwent nerve-sparing cryoablation (unilateral 12, bilateral 8 patients). The follow-up ranged from 13 to 66 months (mean 40). All patients had stable PSA levels at last follow-up. Potency (defined as an erection sufficient to complete intercourse to the satisfaction of the patient) was maintained in 5 with of 20 patients, 15 were potent with phosphodiesterase 5 inhibitors (11) or intracavernosal injection (4).

Conclusions: Nerve-sparing cryoablation, in which one or two neurovascular bundle is spared, showed the possibility of preserving potency in most patients without compromising cancer control. These preliminary results warrant further study.

UP.402, Table 1. Characteristics of the Prostate Cancer Patients Underwent RP Who Had PSM

		PSA Failure			
		Total N=117	Negative N=60	Positive N=57	p-value
Age	Mean (±SD)	62.01 ± 6.06	62.35 ± 5.98	61.65 ± 5.21	0.53
PSA-PRE surgery	0-10	69 (61.1)	42 (72.4)	27 (49.1)	0.04
	10-20	31 (27.4)	11 (19.0)	20 (36.4)	
	>20	13 (11.5)	5 (8.6)	8 (14.6)	
GS	6	16 (13.68)	9 (15.00)	7 (12.28)	0.39
	7	79 (67.52)	43 (71.67)	36 (63.16)	
	8	17 (14.53)	7 (11.67)	10 (17.54)	
	9	5 (4.27)	1 (1.67)	4 (7.02)	
EPE		52 (44.44)	23 (38.33)	29 (50.88)	0.17
SVI		23 (19.66)	11 (18.33)	12 (21.05)	0.71
Margin-length - categorical	<3mm	48 (41.38)	28 (46.67)	20 (35.71)	0.23
	>=3mm	68 (58.62)	32 (53.33)	36 (64.29)	
Margin-KI67 - categorical	1	64 (54.70)	31 (51.67)	33 (57.89)	0.42
	2	31 (26.50)	19 (31.67)	12 (21.05)	
	3	22 (18.80)	10 (16.67)	12 (21.05)	
Margin-Number	Single margin	55 (47.01)	30 (50.00)	25 (43.86)	0.51
	Multiple margins	62 (52.99)	30 (50.00)	32 (56.14)	
KI67-deep tumor - categorical	1	92 (78.63)	49 (81.67)	43 (75.44)	0.71
	2	11 (9.40)	5 (8.33)	6 (10.53)	
	3	14 (11.97)	6 (10.00)	8 (14.04)	
Adjuvant treatment		62 (52.99)	29 (48.33)	33 (57.89)	0.30

UP.408

Correlation of Preoperative and Radical Prostatectomy Gleason Score: Examining the Predictors of Upgrade and Downgrade Results

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Introduction and Objective: Preoperative Gleason score (GS) obtained from Trans Rectal Ultra Sonography (TRUS) is the most common grading system to evaluate the appropriate treatment for patients with clinically localized prostate cancer. But this method showed upgraded and downgraded results in comparison to Gleason score obtained from radical prostatectomy. The current study aimed to determine clinical or pathological variables to reduce the differences between biopsy and radical prostatectomy Gleason scores.

Materials and Methods: Through retrospective review of 52 patients with radical prostatectomy, this study examined the correlations of preoperative Gleason score with age, prostate volume, PSA level, PSA density, digital rectal exam findings and percentage of positive core needle biopsies across two groups,

UP.402, Table 2. Hazard Ratio (HR) with 95% CI for PSA Failure According to the ki67 Expression at the Margin and Deep Tumor, Length of the Margin, and Number of Margin

Variable	HR	95%CI	p
Ki 67 in deep tumor			
Group 1	Reference		
Group 2	1.41	(0.57 – 3.52)	0.46
Group 3	4	(1.64 – 9.80)	0.002
Ki 67 at margin			
Group 1	Reference		
Group 2	1.12	(0.55 – 2.31)	0.75
Group 3	2.08	(0.97 – 4.43)	0.06
Length of the margin			
<3mm	Reference		
>=3 mm	1.28	(0.70 – 2.37)	0.42
Number of margin			
Single Margin	Reference		
Multiple Margins	0.83	(0.45 – 1.51)	0.54

including patients with preoperative GS≤6 (i.e. group one) and patients with preoperative GS≥7 (group two).

Results: The discordance between biopsy GS and radical prostatectomy GS was observed to be 52% in the current study. Among patients with preoperative GS≤6, prostate volume (p value=0.026), PSA density (p value=0.032) and percentage of positive core needle biopsies (p=0.042) were found to be significant predictors for upgrade. There was no significant predictor for downgrade in patients with preoperative GS≥7.

Conclusion: Findings of this study revealed that in patients with preoperative GS≤6, smaller prostate volume, higher prostate density and higher positive results of core needle biopsies were associated with upgrade of GS. Therefore, it should be considered when selecting treatment modalities among these patients

UP.409

A Prostate Biopsy Fit for the Future? Initial Outcomes Using the Freehand Precisionpoint™ Transperineal Access System

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Introduction and Objective: The PrecisionPoint™ transperineal access system enables both standard systematic template and targeted transperineal prostate biopsy, using an ergonomic freehand device under local anaesthetic. We present our initial evaluation of this device.

Materials and Methods: Twenty one patients underwent the procedure between April 2016-January 2017. Initially, all cases were performed under general anaesthetic (GA) to allow familiarization with the technique and local anaesthetic (LA) protocol. All patients underwent a pre-procedural multi-parametric MRI scan. 11 were for primary biopsies, 9 were on active surveillance (AS), and 1 was for restaging. In 4 patients, an MRI lesion was targeted cognitively in addition to standard systematic biopsies. Median age was 61 (49-76) years, median PSA 6 (0.96-60) ng/ml with a median prostate volume of 30 (10-102) cc and PSA density 0.17 (0.05-2.4) ng/ml/cc. Histological and oncological outcomes were recorded.

Results: Seven procedures were performed under GA, 7 under sedation + LA, and 7 with LA only. A median of 24 (24-33) cores were taken. Of 11 primary biopsies, 3 were positive (27%). Of 10 AS or restaging biopsies, 70% had their disease upgraded. These were 1 Gleason 4+3, and 6 Gleason 3+4. Of these upgraded patients, 3 underwent a Robotic Prostatectomy, 2 proceeded to Brachytherapy, and 2 to hormone radiotherapy. Standard biopsies with cognitive targets were performed in 4 (19%) patients, with 1 Gleason 4+3, 2 Gleason 3+4, and 1 being benign. One patient developed urinary retention, which resolved. No patients developed sepsis.

Conclusion: Prostate biopsy using the PrecisionPoint™ system is safe and can be performed under local anaesthetic. Our findings are comparable to standard transperineal template biopsies. Results are encouraging that future transperineal freehand MRI-fusion targeted biopsies under local anaesthetic, with systematic biopsy to the rest of the prostate will be possible.

UP.410

Predictive Factors for Biopsy Subgrading in Gleason 6 Prostate Cancer

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Introduction and Objective: Gleason score in prostate biopsy (PB) is one of the most important factors in deciding how to treat prostate cancer (PC). The corelation between Gleason scores in biopsy and in radical prostatectomy (RP) is weak, which could lead to suboptimal treatment of patients initially defined as low-risk. Evaluate the rate of subgrading of patients with biopsies showing Gelason 6 PC. Identify clinical and analytical factors correlating with subgrading that could be used in regular practice. Compare rates of recurrence in patients initially subgraded.

Materials and Methods: Review of the clinical files from 189 patients with PB showing a Gleason 6 PC, who underwent RP between July 2008 and December 2015. The following factors were evaluated: age, initial PSA, prostate volume (PV), presence of bilateral tumor, number of positive cores, percentage of positive biopsy material per lobe, lymphovascular invasion and perineural invasion in PB. After RP, the presence of lymphovascular and perineural invasion, pT staging, margins and PV were also evaluated. Statistical analysis with SPSS 20®.

Results: Mean age was 62.94 years (43-77). Mean follow-up was 42.15 months. Mean initial PSA was 11.27 ng/mL (4-30), with 43.2% of PC being bilateral and with a mean 3.54 positive cores per biopsy (1-12). 60.6% of patients had a Gleason > 6 in the RP specimen. Factors correlating with this subgrading were a PV < 50cc (p=0.008) and more than 3 positive cores in PB (p=0.003). The rate of recurrence was 14.4% (excluding the 9 patients who underwent adjunctive radiotherapy). There was no correlation between recurrence and the following factors: subgrading (p=0.981), positive surgical margins (p=0.142), pT staging (p=0.049).

Conclusion: In our series, most PC with Gleason 6 in PB are subgraded, with a lower PV and higher number of positive cores being predictive factors for subgrading; this did not correlate with higher rates of recurrence. To better decide the appropriate therapy strategy for patients with localized PC, better clinical and histological factors from PB need to be analyzed to increase the probability of an adequate grading.

UP.411

Urinary Health-Related Quality of Life Assessment Using the King's Health Questionnaire in Patients with Prostate Cancer Treated with Brachytherapy

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Introduction and Objective: Acute urinary symptoms are very common complications resulting from prostate brachytherapy for patients with clinically localized prostate cancer. The International Prostate Symptom Score (IPSS) is frequently used to assess urinary symptoms. However, because of the questionnaire's sole quality of life (QOL) category, it is unknown the detail of urinary health-related QOL. In the present study, we aimed to investigate the urinary health-related QOL influenced by prostate brachytherapy in Japanese patients, using the King's Health Questionnaire (KHQ).

Materials and Methods: A total of 104 patients who underwent prostate brachytherapy between April 2006 and July 2014 were included in this study. Brachytherapy was performed transperineally with permanent low dose-rate isotopes (Iodine-125). The changes in the total IPSS and KHQ scores were calculated during the study (during pre-treatment and reassessed at 1, 3, 6, 12, 15, 18, 21, and 24 months). The IPSS was defined as follows: 0-7 = mild, 8-19 = moderate, and 20-35 = severe.

Results: Of all patients who completed the IPSS and the KHQ, 58 (51.9%) men had a moderate-to-severe IPSS. Significant increases in the IPSS were observed at 1-6 months following prostate brachytherapy. Moreover, the IPSS improved at 6 months, recovered to baseline at 12 months, and then decreased significantly at 21-24 months. The KQH scores increased significantly at 1-12 months in all domains except general health perceptions. The KQH scores also demonstrated that the patients experienced a prolonged recovery to their baseline in comparison to information obtained from the IPSS results. Significant differences in QOL were observed between patients whose KQH scores worsened and those with moderate-to-severe IPSS scores. However, no significant differences in QOL were observed in those who experienced mild changes in their IPSS.

Conclusion: Thus, the KHQ shows that the urinary symptom burden may be prolonged compared with the results of the IPSS in prostate cancer patients who have received brachytherapy. The KHQ may be useful in assessing urinary health-related QOL in greater detail.

UP.412

Defining Predictors of Early, Intermediate and Late Biochemical Recurrence in Men with Clinically Localized Prostate Cancer Treated with Minimally Invasive Radical Prostatectomy

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Introduction and Objective: Follow up after radical prostatectomy should be tailored to clinical and pathologic characteristics. To determine predictive factors for early, intermediate and late biochemical recurrence (BCR) after minimally invasive radical prostatectomy (MIRP: lap and robot) in patients with localized prostate cancer (PCa).

Materials and Methods: Prospective clinical, pathologic, and outcome data were collected for 6195 patients with cT1-3N0M0 PCa treated with MIRP at our institution from 2000 to 2016. None of them received neoadjuvant therapy. BCR was defined as PSA level greater than 0.2 ng/ml. Time to BCR was divided in terciles to identify variables associated with early (<12 months), intermediate (12-36 months) and late BCR (>36 months). Comparisons among groups were performed using ANOVA or Chi square test. Logistic regression models were built to determine risk factors associated with BCR at each time interval.

Results: We identified 1148 (19%) patients with BCR. Median time to BCR was 24 months. Statistically significant differences were found between the groups concerning PSA preoperative, D'Amico risk, type of surgery, pT stage, pathological Gleason, positive margins and extracapsular extension. Multivariable logistic regression analysis showed preoperative PSA, positive nodes, positive surgical margins and laparoscopic surgery were associated with early BCR. Laparoscopic surgery was the only risk factor associated with intermediate term BCR. Significant predictors of late BCR included Gleason >7, >pT3, positive surgical margins, lymph node dissection performance and laparoscopic surgery.

Conclusions: Patients with high risk features like Gleason ≥7, ≥pT3 and or positive surgical margins may develop late recurrence and deserve long term follow up. Identify patients with higher PSA and lymph node invasion has an important predictive role due to the risk of BCR within the first year. The association between laparoscopic technique and late BCR deserves further evaluation.

UP.413

Predictive Factors and the Important Role of Detectable Prostate-Specific Antigen for the Detection of Clinical Recurrence Following Robot-Assisted Radical Prostatectomy

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Introduction and Objective: To evaluate predictive factors associated with detectable prostate-specific antigen (PSA) and clinical recurrence (CR) after robot assisted radical prostatectomy (RARP).

Materials and Methods: The study included 2500 patients who were treated with RARP at a single institution between 2000 and 2016. Patients were divided into two groups according to PSA value at 6 weeks after surgery: undetectable PSA (PSA <0.1 ng/dl) and PSA persistently elevated (PSA ≥ 0.1 ng/dl). A univariate and multivariate logistic regression analysis was used to evaluate the association between various covariates and: (1) detectable PSA, (2) Clinical recurrence (CR) in the persistently elevated PSA group. Kaplan-Meier analyses were used to assess CR and cancer-specific mortality (CSM) rates according to PSA persistence.

Results: Overall, 229 patients (9.16%) experienced PSA persistence and from them, 38 men (16.5%) had CR. Inside the group of PSA ≥ 0,1 ng/dl ,146 men (63.75%) received adjuvant treatments (10.91% androgen deprivation therapy (ADT) vs 52.83% external beam radiotherapy (EBRT/EBRT+ADT), and 44 patients (19.21%) salvages therapies (8.73% ADT vs 10.48% EBRT/EBRT+ADT). Predictors of detectable PSA after surgery were PSA >10 ng/dl, Gleason ^{3}7+3, ^{3}pT3, positive surgical margins and % positive biopsy cores >33% (all p<0.03. In multivariable analyses within patients with detectable PSA, ^{3}pT3a (HR: 2.71; p<0.029) and to received adjuvant ADT (HR: 13.36; p<0.001) were associated with CR. CR-free survival for patients with Gleason ≤ 6 at 3-year was 100% vs 60% and 20% for Gleason 7(4+3) and Gleason ≥ 8, respectively (p 0.02). 10-year CSM rates were higher for patients with CR (p <0.001), for men with Gleason ≥ 8 (10% at 10-y; p 0,003) and ^{3}pT3a (9% at 10-y; p 0.05). CSM rate for patients who received adjuvant ADT+ RT was 20%, 10% for men with ADT and 0% for patients without adjuvant treatment at 10-year (p 0.03).

Conclusion: A detectable PSA is clearly affected by factors associated with high risk prostate cancer. Stage pT3 and adjuvant ADT have an important prognostic value in the prediction of CR. Patients with CR, Gleason ≥ 8, stage ≥ pT3 and those who are treated with adjuvant ADT+ RT must have a close monitoring due to the high rate of mortality.

UP.414

Pudendal Nerve Somatosensory Evoked Potentials in Patients with Postprostatectomy Incontinence and Erectile Dysfunction

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Introduction and Objective: Pudendal nerve somatosensory evoked potential (SSEP) has been studied in voiding and erectile dysfunctions. We aimed to evaluate correlation with pudendal nerve SSEP and functional outcome in patients undergoing radical prostatectomy.

Materials and Methods: We retrospectively analyzed data from 31 patients who underwent radical prostatectomy from January 2014 and June 2015, with at least 1 year of follow-up. Patients were divided into 2 groups depending on the presence/absence of incontinence and erectile dysfunction, respectively. Patient demographic characteristics, preoperative evaluations, postoperative outcomes and pudendal nerve SSEP were assessed. Erectile function recovery was defined as question 2 and 3 on the International Index of Erectile Function (IIEF)-5 and continence was defined as using no pads.

Results: Patients with/without postoperative incontinence were 18 and 13, respectively. Demographic characteristics and perioperative outcome were similar between 2 groups. Patients with/without postoperative erectile dysfunction were 23 and 8, respectively. Demographic characteristics and perioperative outcomes were similar according to presence/absence of erectile dysfunction. Patients with erectile dysfunction were a significant increase in latency of pudendal nerve SSEP (19.4 vs 17.2 ms, p=0.016). Patients with postoperative incontinence (PPI) were a significant increase in latency of pudendal nerve SSEP (19.6 vs 17.7 ms, p=0.023)

Conclusion: Our results suggest that pudendal nerve SSEP can be an effective tool in the evaluation of patients with PPI and erectile dysfunction. The test can be used to provide more definitive assessment of functional dysfunction.

UP.415

Prostate Desmoplastic Small-Round-Cell Tumor in Young Man

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Introduction and Objective: The desmoplastic small round cell tumor (DSRCT) is a rare and an aggressive malignant neoplasm affecting adolescents and young adults with a male predominance and a predilection for serosal surfaces. Genetically, it is characterized by a recurrent t (11;22)(p13;q12) translocation forming the EWSR1-WT1 fusion gene. Immunohistochemically, it shows epithelial, muscular and neural markers. The most frequent locations of this malignancy are the abdominal cavity and/or the pelvic peritoneum. Other anatomical sites are possible such as the salivary glands, thoracic region, and central nervous system (Jerzy Klijanienko et al., Cancer Cytopathology, 2014).

Materials and Methods: We report a case of a 21-year-old Algerian man admitted in emergency department suffering from a bad general state, unexplained weight loss, ascite, collateral venous circulation, pleural effusion, pollakiuria, dysuria and urinary infection with repetition. The radiological studies showed a great tumoral mass (160x90x80mm) occupying the prostate bed with displacement and infiltration of neighboring anatomical structures. Anatomopathological explorations showed undifferentiated round-cells separated by dense fibrous stroma. These neoplastic cells were immunoreactive for cytokeratins (AE1/3, CK7), PSA, Myogenin...confirming the desmoplastic aspect of this tumor.

Results: Imatinib 600mg/day was administered to the patient for three months improving his clinical signs together with the stabilization of the tumoral lesions. The patient is subjected to Cisplatin 175 mg/m2 chemotherapy waiting to assess the feasibility of chemotherapy and ultimately hoped the excision of the tumoral prostatic mass.

Conclusion: DSRCT is very invasive with a poor prognosis since patients are succumbing to disease within the first two years of diagnosis. The therapeutic arsenal includes surgery, radiotherapy and chemotherapy. Combining treatment strategies can improve the survival but the overall prognosis remains very poor.

UP.416

Perineural Invasion, Positive Surgical Margin and Lymphovascular Invasion are Associated with Increased Risk of Biochemical Recurrence in Patients Undergoing Radical Prostatectomy

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Introduction and Objectives: This study was designed to determine whether perineural invasion (PNI), positive surgical margin (PSM) and lymphovascular invasion (LVI) are independent predictors for biochemical recurrence (BCR) of prostate cancer (PCa) following radical prostatectomy (RP) in the Asian population.

Materials and Methods: The study population comprised 549 PCa patients undergoing RP at single institution in Korea. We compared the baseline characteristics between the groups according to the presence of PNI or LVI and estimated BCR-free survival using the Kaplan–Meier survival. Multivariate Cox regression model was adopted to identify significant predictive factors of BCR following RP.

Results: Among 504 patients, PNI, PSM and LVI were detected in 68.1, 25.4 and 5.5 %, respectively. Patients with PNI or LVI had higher rates of advanced biopsy and pathological Gleason score (≥7), and higher proportions of advanced clinical and pathological T stage ≥3, extraprostatic extension, seminal vesicle invasion, and surgical margin positivity. Notably, BCR-free survival was lower in patients with PNI or LVI compared with that in patients without these markers and lower in patients with both markers compared with that in other populations of patients. Moreover, PNI (hazard ratio [HR] = 2.11) and LVI (HR = 1.57) were significant predictors of BCR. The presence of the two markers was associated with a higher risk of BCR (HR = 4.60) compared with the presence of either marker alone (HR = 3.47).

Conclusions: PNI and LVI are adverse pathologic parameters and independent predictors for BCR, and the concurrent presence of PNI and LVI resulted in poorer outcomes for BCR in PCa patients who underwent RP.

UP.417

Efficacy of Dorsal Onlay Oral Mucosal Graft Urethroplasty in Female Urethral Stricture

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Introduction and Objective: To assess the efficacy of dorsal oral mucosal graft urethroplasty and following dilatations in women with urethral stricture.

Materials and Methods: We assessed retrospectively the clinical records of 16 female patients who underwent urethroplasty from March 2010 to February of 2016. In all cases, we performed uroflowmetry, urethrography and endoscopy before the surgery. The surgical procedure consisted in a dorsal semicircular incision around the urethra. Then the urethra was dissected proximally and opened dorsally. Finally, an augmented urethroplasty was performed using a dorsal oral mucosal graft. Failure was defined as the impossibility to perform a flexible urethroscopy (16 Fr).

Results: The etiology of the urethral stricture was idiopathic in 7 patients (43.7%), iatrogenic in 8 patients (50%) and Steven-Johnson syndrome in one patient (6.25%). The patient's mean age was 44.7 years old. The mean uroflowmetry before surgery was 6.9 ml/s. Fifteen patients had prior dilatations (93,7%) and 6 patients (37.5%) had endoscopic procedures. After patient's urethroplasty, no complications were registered. Postoperative urethral catheterization time was 3 weeks, and no urethrography was performed at the time of the catheter removal. The mean follow-up period was 30.3 months. The follow-up procedures were clinical symptoms, urine culture and uroflowmetry. We contemplated endoscopic evaluation only for those patients who referred obstructive symptoms, Q máx < 15 and/or urinary infection. Ten patients (62.5 %) were asymptomatic with a uroflowmetry range between 15 and 22 ml/seg. Six patients (37.5 %) failed: 3 patients needed one dilatation to improve the urethral pattern; 1 patient required urethral dilatation every 3 months; and 2 patients needed a second urethroplasty.

Conclusion: In our experience, the dorsal oral mucosal urethroplasty as unique procedure has acceptable results. However, additional dilatations increase the success rate from 62.5% to 81.2%.

UP.418

Contemporary Management of Penetrating Renal Injuries: 11 year Experience from Two Urban Major Trauma Centres

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Introduction and Objective: Penetrating renal injuries can be challenging to manage due to the unpredictable internal damage caused by the weapon as well as other associated serious injuries. We present our series of penetrating renal injuries and discuss contemporary management.

Materials and Methods: We reviewed prospective urological trauma databases for all patients presenting with penetrating renal trauma between January 2005 and October 2016 in two major urban trauma centers. Patient demographics, clinical characteristics, imaging, management and follow-up data were analysed.

Results: Sixty-three patients presented with penetrating renal injuries. The vast majority were male (97%) with mean age 27 years (14-71). The commonest mechanisms of injury were stabbing (87.3%) and gunshot (11.1%). Eleven (17.5%) patients had Grade 2 injury, twenty-six (41.3%) had Grade 3 injury and twenty-six (41.3%) had Grade 4 injury. The commonest associated injuries were thoracic (36.5%), liver (17.5%), splenic (15.9%), gastrointestinal (12.7%) and skeletal (9.5%). At presentation, sixteen (25.4%) patients were haemodynamically unstable. Seven patients required blood transfusion (11.1%). Fifty-two (82.5%) patients were managed conservatively while eleven (17.4%) underwent emergency selective renal artery embolisation. Six patients underwent laparotomy for visceral injuries while their renal injury was managed conservatively. No patients required nephrectomy and there were no mortalities. On follow-up, four (7.3%) patients developed renal artery pseudoaneurysm and one developed renal arteriovenous malformation requiring embolisation.

Conclusion: Most patients with penetrating renal injuries can be safely managed non-operatively. Selective renal artery embolisation is an effective option for unstable patients with excellent outcomes. Associated thoracic or visceral injuries requiring operative management are common.

UP.419

Combined Tissue Transfer of Circular Fasciocutaneous Flap and Ventral Onlay Buccal Mucosal Graft as a Single Stage Urethroplasty for Panurethral Strictures

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Introduction and Objective: To report our experience of single stage urethroplasty using ventral onlay buccal mucosal graft (BMG) and penile circular fasciocutaneous flap (FCF) for panurethral strictures.

Materials and Methods: Retrospective review was performed for patients who underwent single stage urethroplasty using ventral onlay BMG and penile circular FCF for panurethral stricture in a single institution by a single surgeon from May 2010 to October 2015 with a minimum follow-up of 6 months. Success was defined as an open urethra without voiding difficulty and treated with no additional procedures or managed with single dilation.

Results: A total of 19 patients were included for the analysis. Median age at operation was 67 years (range 40-80). Median follow-up duration was 13 months (range 6-55). Median stricture length was 12 cm. The etiology of strictures was iatrogenic except 1 patient with idiopathic cause. Median length of graft and flap was 3.5 and 11cm respectively. Success was achieved in 12 of 19 patients. One of them was treated with multiple dilation for suspicious BMG contracture. One patient was treated with 2 stage operation successfully using full thickness skin graft after 11 months. Two patients were managed with intermittent urethral dilation for recurrence of proximal margin, and 3 were managed satisfactorily with self-dilation due to recurrence at distal FCF margin.

Conclusion: Considering the challenges and difficulties in treatments of panurethral strictures, the combined tissue transfer using ventral BMG and penile FCF is a viable option for patients with panurethral strictures having available penile skins without lichen sclerosis.

UP.420

A Single Case of Total Amputation of the Penis Successfully Reattached by Macrosurgical Technique

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Introduction and Objective: In Algeria, penile injuries are mostly due to self-amputation owing to schizophrenic episode or to severe pelvic trauma following everyday life accidents. These injuries are compromising the vital and functional prognosis of patients. Phallic reconstruction is then required to restore physiological functions of the penis and to improve severe psychological outcomes.

Materials and Methods: Here we report the case of a 32-year-old patient, presenting a total amputation of the penis, admitted to the emergency department of Mustapha Pacha Hospital, Algeria, with a serious pelvic trauma due to an accident while handling chain saw. The occasioned laceration extends obliquely from the femoral triangle on the left to the inguinal region on the right. We noticed a decayed scrotum, a complete severance of the right spermatic cord and a total penile amputation flush to pubic symphysis.

Results: Due to microsurgical-limited technical facilities, the patient underwent emergency surgery consisted, first, on the reconstruction of the right spermatic cord, the corpora cavernosa and the corpus spongiosum by 5-0 polydioxanone sutures following a macrosurgical approach followed by end-to-end anastomosis (suture) of the urethra. We have then proceeded to urethral cauterization together with the bladder on a 22 Ch Foley catheter that was inserted and maintained for 21 days. After the removal of the catheter, we have observed a regular urethral profile without signs of stricture. The patient referred normal voiding and ejaculating functions but a defective penile sensation and erectile troubles that required physical reeducation and intracavernous injection of Aloprostadil 10 µg for two months. Seven months later, the patient recovered penile sensation and normal spontaneous erectile function.

Conclusion: The patient underwent a successful total phallic rehabilitation with a macrosurgical approach that yielded excellent results and allows to regain sexual and urinary functions. That was possible thanks to an early surgical treatment and a precise assessment of the lesions.

UP.421

The Therapeutic Effects of Intracavernosal Plaque Excision in Peyronie's Disease: A None Grafting or Tunical Excising Procedure

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Introduction and Objective: Current surgical treatments in Peyronie's disease are accompanied by complications such as penile shortening, loss of sensation, erectile dysfunction and recurrence of disease. The aim of this study was the evaluation of clinical results of intracavernosal plaque excision in Peyronie's disease.

Materials and Methods: The operation was performed on 35 men. It was consisted of incising the tunica albuginea parallel to the plaque and through this incision, and the plaque was removed from the inside surface without excision or replacing the underlying tunica albuginea by grafts. All patients were evaluated before and periodically within 12 months after the surgery with measurement of penile length, curvature angle in the rigidity phase, and sexual satisfaction.

Results: The mean age of patients was 51.4±5.3 years (range 42-59 years). The angle of penile curvature was 25-45° (mean=35°). Thirty patients (86%) obtained a nearly complete straightening of penis. All patients restored their previous penile length without any disorder of sensation within the glans penis and expressed improvement of sexual activity.

Conclusion: Intracavernosal plaque excision is a simple, easy and minimal invasive method that does not result in penile shortening, loss of sensation or erectile dysfunction. In properly selected patients, this technique can lead to acceptable elimination of penile curvature and sexual satisfaction.

UP.422

Correlation between Pelvic Fracture and Bladder Injury Due to Blunt Trauma in Hasan Sadikin Hospital

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Introduction and Objective: Urogenital trauma occurs in 10% of all trauma, and 2% of which involves the bladder. As many 60-90% of patients with bladder injuries caused by blunt trauma have associated pelvic fractures. The aim of this study was to determine the correlation between bladder injury and pelvic fracture due to blunt trauma in Hasan Sadikin Hospital.

Materials and Methods: This is a retrospective study. The data were collected from medical records. We gather the epidemiological data from hospital medical records, and then we analyze the odds ratio between pelvic fracture and bladder injury.

Results: From 2012-2016 there were total of 16 605 patients came to emergency department due to trauma. Among those patients, 1 989 patients (8%) came with blunt trauma, 205 patients (0.01%) had pelvic fracture injury. Of the pelvic fracture patients, 36 (17.5%) had bladder injury. The mean age was 26.6 ±13.6 years. The most common pelvic fracture type was ramus pubis fracture (47.2%), the most common bladder injury was extraperitoneal injury (61.2%) with majority of the trauma was low grade trauma (48.4%). We found no significant correlation between type of pelvic fracture with type of bladder injury (p=0.723) and severity (p=0.734). We found significant higher risk of bladder injury among the patients who suffer pelvic fracture (OR=2.9, CI 95% p=0.04), bladder neck injury (OR= 3.86, CI=95% p=0.09), but not intraperitoneal injury (OR=0.670 CI=95% p=0.484) compared to population without pelvic fracture.

Conclusion: Pelvic fracture significantly increasing risk of having bladder injury due to blunt trauma especially bladder neck trauma. There was no correlation between pelvic fracture type with bladder injury type and severity.

UP.423

Repair of Conservative Cases of Hypospadias at the 37 Military Hospital

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Introduction and Objective: Hypospadias is one of the commonest urologic congenital anomalies. Prevalence is about 509 (119 – 110): 10000 in Africa. About two-thirds to three quarters of hypospadias are glanular. The renaissance of hypospadias surgery was established by Thiersch and Duplay during the second part of the 19th century. Since then, hundreds of techniques have evolved, mostly to answer the challenge of creating a functional neo-urethra. Some popular procedures include; glans approximation procedure (GAP), meatal advancement and glanuloplasty incor-

porated (MAGPI), tubularized incised plate urethroplasty (TIPU), Mustarde´. The aims are to: 1) to determine the age of presentation for hypospadias repair, 2) to determine the outcome of buccal mucosa repair in hypospadias, 3) to determine the complications type in hypospadias repair.

Materials and Methods: This is a retrospective study of patients who had hypospadias repair between the periods of May 2010 to May 2015. A total 33 patients were studied out of 359 surgeries done within the period. Data of patient's age, type of hypospadias, type of repair, complications were recorded. . Repair was done for patients older than 6 months. All age groups were included, all hypospadias repair done before the year 2010 were excluded. Types of repair for urethral construction included; Glans Approximation procedure, (GAP); meatal advancement and glanuloplasty incorporated, (MAGPI); tubularized incised plate urethroplasty, (TIPU); Mustarde´; buccal mucosal tube tunnelled urethroplasty. For the correction of the chordae, a dermal graft was the main procedure of choice.

Results: The commonest age of presentation and repair is before the age of 5 years.

Conclusion: Representing about 54% (18% of these patients are below one year). The commonest type of hypospadias is the glanular type (33%). Buccal mucosal tube repair can be a good one stage procedure for proximal hypospadias. Commonest complication is urethrocutaneous fistula.

UP.424

Buccal Mucosa Meatoplasty with Glans Retraction and Intraurethral Suturing: A Brief Description of the Technique and Review of Six Cases

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Introduction and Objectives: We herein describe a technique of buccal mucosa meatoplasty with glans retraction and intraurethral suturing. We describe the technique in brief and present the results in six patients.

Materials and Methods: The principle steps include: 1) Degloving of the penis. 2) Adequate glans retraction with retractors or skin hooks and placement of ventral urethrotomy in a subglanular fashion. 3) Initiation of the buccal graft suturing external to the meatus, transferring the graft intraurethrally, and continuing and finishing the mucosal suturing intraurethrally. 4) Additional dorsal meatotomy and buccal inlay grafting in a similar fashion if required. 5) Closure of the ventral urethrotomy with plication of the buccal mucosa. The meatoplasty is usually performed ventrally, or additionally augmented with a dorsal repair if the meatus is very narrow. The procedure is performed with use of 3.5 X magnification loupes and head light, and the sutures used are 6-0 polyglycolic acid interrupted sutures. We have used this technique in six patients with meatal stenosis.

Results: With an average follow up of 24 months (ranging from 11 months to 48 months), none (0%) of them have developed recurrent meatal stenosis. One patient is on urethral calibration for proximal urethral narrowing and another patient underwent optical urethrotomy for proximal urethral stricture recurrence, with due consideration that the etiology of the stricture in 5 patients was balanitis xerotica obliterans. None of the patients require meatal calibration. Satisfaction factor was less in the patients who required calibration postoperatively, average satisfaction being 90.8%. Both positions of the graft yielded good surgical results with regard to meatal patency. (Table 1).

Conclusion: We describe a new technique buccal mucosa meatoplasty with emphasis on glans retraction and intraurethral suturing, aided with magnification and good illumination. We present our surgical results in 6 patients.

UP.425

Blunt and Penetrating High Grade Renal Trauma: Prognosis Comparison Study in a Single Institution

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Introduction and Objective: The prognosis evaluation of the high grade renal trauma (HGRT) depends on several parameters. The objective of this study is To analyze and compare the severity of the prognosis between blunt and penetrating mechanism in the HGRT (grades IV and V according to the classification of the American Association for the Surgery of Trauma).

Materials and Methods: Between June 2006 and June 2016, all patients who had high grade renal trauma (grades IV and V) were identified and divided into two groups : group 1=penetrating trauma, group 2=blunt trauma) and retrospectively compared in terms of hypotension, hemoglobin-hematocrit and computed tomography scan results at zero day and during hospitalization also the type of adopted treatment, conservative or surgical. The conservative treatment is considered as an absence of surgery at admission or during hospitalization (nephroraphia, nephrectomy), the necessity for an endo urological intervention or embolization does not mean a failure of conservative treatment. Statistical analysis was descriptive and Multivariate, the significance threshold is used for a $p < \text{or} = 0.05$.

Results: Seventy patients were included in this study, 19 cases (27.14%) in group 1 and 51 cases (72.85%) in the group 2. the mean age was 23.94 and 29.21 years in groups 1 and 2 respectively ($p = 0.67$). The associated lesions were present in 31.2% of group 1 and 68.8% in group 2 ($p = 0.70$). There was no significant difference between the two groups regarding anemia and transfusion rates ($p = 0.40$ and $p = 0.52$). Hemodynamic instability represented 61.1% and 38.9% in groups 1 and 2 respectively ($p = 0.005$). Grade V was present in 26.3% of cases in group 1 and 9.8% in group 2 ($p = 0.05$). surgery was required in 42.1% in group 1 and 17.6% in group 2 ($p = 0.034$).

Conclusion: The penetrating type seems more severe than blunt type of high grade renal trauma according to this study, in term of frequency of hemodynamic instability, grade V of trauma and the high rate of conservative treatment failure.

UP.426

Vesicourethral Anastomotic Stenosis Post-Radical Prostatectomy: Management with the Principle of Pippi Salle Procedure: A Case Report

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Introduction and Objective: Prostate cancer is the most common neoplasia in men, and whether treated with surgery or radiotherapy it represents a risk of developing urethral stricture estimated from 1% to 8%. Vesicourethral anastomotic stenosis occurs in the first 24 months following radical prostatectomy; due to high recurrence rates, this condition poses a major challenge for the urologist. In light of the foregoing, an alternative technique is described for open reconstruction of the urethrovesical anastomosis

Materials and Methods: A 61-year old patient with prostate adenocarcinoma Gleason 3+4 score 7 pT3aN0M0, was treated with radical prostatectomy and pelvic lymphadenectomy with adequate oncological control. He presented with lower urinary tract symptoms, was assessed with cystourethrography and cystourethroscopy and the presence of the anastomotic stenosis was verified. Four times dilatations were performed without improvement and finally he required a cistostomy. Modified Pippi Salle procedure, described for pediatric bladder neck repair, was adapted for urethrovesical anastomosis reconstruction:

- Perineal incision and dissection until bulbospongiosus muscle is exposed and sectioned.
- Urethral dissection up to penoscrotal junction and proximal stenotic segment section.
- Longitudinal abdominal incision and bladder exposure
- Anterior bladder inverted U-flap creation- with flap base at bladder neck - and subsequent neotube formation with nelaton 18 Fr catheters.
- Neo-tube transposition to perineal space under symphysis pubis and anastomosis with proximal urethral segment

Results: Patient has been follow up for 12 months and has evolved satisfactorily, urethral catheter was removed 1 month after the surgery and a 80 % continence was achieved with occasional urinary stress incontinence requiring 1 pad per day.

Conclusion: Although the ideal treatment for recurrent UVA strictures remains debatable, our case shows that the urologist must be aware of several treatment options, as the open vesicourethral anastomosis reconstruction technique following radical prostatectomy. At present, there is no report in the literature on the use of the above-mentioned technique in this type of patients.

UP.427

Long-Term Urodynamic and Clinical Evaluation of Ileal Neobladder Reconstruction Following Radical Cystectomy

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Introduction and Objective: The aim of this study is to compare clinical and urodynamic parameters among patients undergoing orthotopic neobladder substitution with ileal segment.

Materials and Methods: Between 1991 and 2015 orthotopic bladder replacement with an ileal segment was performed 158 patients. All data were recorded retrospectively from medical records. For neobladder function, at 1 year follow-up we checked abdominal computed tomography, voiding cystourethrography and voiding diary. 28 patients underwent urodynamic evaluation. Urodynamic data were divided into four groups based on follow-up duration. Preoperative (17 patients), 6 months (24 patients), 1-5 years (20 patients) and above 5 years (15 patients) after surgery evaluations were performed by urodynamic study.

Results: All patients were men. Mean age is 61.7 (range: 40-72) years. Mean follow-up period is 86.7 (range: 7-182) months. Maximum bladder capacity, maximum detrusor pressure (Pdet) and, maximum urethral closure pressure improves over the time. Maximum flow rate (Qmax) are constant during the follow up. There was vesico-ureteric reflux during voiding in 5 renal units. At day time, 23 of 28 substitution patients were completely continent. 13 of 28 substitutions have night time continence. Of neobladder-related complications, the most common was acute pyelonephritis.

Conclusions: Long-term urodynamic and clinical outcomes with the ileal neobladder have acceptable. The urodynamic parameters without Maximum flow rate tended to improve with the lapse of time. However, the number of patients in each group was relatively small in comparison to the numbers of orthotopic diversion. Our results support the safety and feasibility of radical cystectomy with orthotopic bladder substitution.

UP.428

Posterior Anastomotic Urethroplasty in an Infant

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Introduction and Objective: Boys with high imperforate anus have a recto urethral fistula, which usually occurs at the prostatomembranous junction. Recent trend is to perform a single stage posterior sagittal posterior anorectoplasty (PSARP) with pull through and closure of fistula. Inadvertent posterior urethral injury during repair may result in traumatic obliteration. We evaluated our outcomes of posterior urethroplasty in infants.

Materials and Methods: We evaluated infants referred to us with posterior urethral injury after PSARP. We managed 3 infants with posterior urethral injury - 3 after PSARP during 2012 to 2016. Follow up ranged from 6 months to 4 years. Iatrogenic injury was noticed after PSARP on removal of catheter. Suprapubic catheter (SPC) was inserted. Retrograde urethrogram (RGU), voiding cystourethrogram (VCUG) and endoscopy from above and below was performed before anastomotic urethroplasty.

Results: Our study included 3 infants. Three were born with high imperforate anus and recto urethral fistula. PSARP was complicated by posterior urethral transection resulting in an obliterated urethra. This was initially managed with a supra-pubic catheter followed by transperineal anastomotic urethroplasty. Two required crural separation and inferior pubectomy. Two infants had an uneventful recovery. One infant had an annular narrowing at the anastomotic site and required endoscopic internal urethrotomy twice. We waited till the child was older (age 4) and performed urodynamics. This revealed obstruction and the patient underwent redo anastomotic urethroplasty with crural separation and inferior pubectomy. This had an uneventful recovery.

Conclusions: Iatrogenic urethral injuries are rare in infants. Anastomotic urethroplasty achieves physiological voiding and prevents complications of prolonged SPC. Even though the surgery is challenging in an infant, our series, suggest that this is feasible with good outcomes.

UP.429

Clampo-Tractor—A Novel Self Retaining Clamp Retractor for Penile Urethral Reconstruction: Improving Surgeon Ergonomics

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Introduction and Objective: Constant, steady retraction and exposure are important for penile surgery- hypospadias repair, urethral reconstruction, and correction of penile curvature. We set to develop a retractor that would improve surgeon and assistant ergonomics and provide compression at the base of the penis to reduce blood loss. We describe this novel self-retaining penile retractor.

Materials and Methods: This retractor is made of medical grade stainless steel. It has three components a fixed hemostatic clamp attached to a scale, with also houses an artery forceps. This forceps moves along the scale to adjust the traction on the penis. The clamp is flat, compressive,non-traumatic and do not cause circumferential constriction. A stay suture taken through the glans is engaged by the artery forceps, and the height adjusted according to the penile length. The retractor has been used by reconstructive urologists in India, Turkey, Australia, Kuwait, Indonesia, and the USA.

Results: Thirty-seven reconstructive cases were performed using this retractor (23 redohypospadias repairs, 7 complex penile urethroplasties, 4 penile urethrocutaneous fistula repairs, 3 surgeries for correction of Peyronies disease). For each case, surgeons were asked to score the retractor on 4 point scale: 1.Extremely Non Satisfactory, 2.Not Satisfactory, 3.Satisfactory, 4.Extremely Satisfactory. The average score was 3.65. Advantages noted were ease of application, reduction of assistant fatigue, stable operative exposure and non-traumatic tissue compression conferring a bloodless field. There were no complications attributable to the device. The main limitation is that it cannot be used for hypospadias proximal to the penoscrotal junction. This retractor is inexpensive, durable, easy to sterilize and can be used on adult and pediatric patients.

Conclusion: In our experience this retractor has high utility in reconstruction of the penis and penile urethra. It affords improved ergonomics for the surgeon and assistant, which results in shorter operative times and reduced blood loss while avoiding tissue damage.

UP.424, Table 1.

Nos.	Age	Etiology	Dorsal or ventral	Diabetes	Smokerq	Tobacco	Str length	Graft size	Mean fu	Bleeding	Diverticula	Failure	Sprainvg	Calibration	Impro-vement	Satisfac-tion score maxi-mum = 10
1	40	BXO	dorsal	no	no	yes	17 cms	19 cms	35 months	no	no	no	yes	yes	yes	7
2	42	BXO	ventral	no	15 yr	15	19 cms	20 cms	23 months	no	no	no	yes	no	yes	10
3	55	BXO	ventral	no	no	no	20 cms	20 cms	20 months	no	no	no	no	viu	yes	8
4	60	BXO	dorsal ventral	no	no	no	4 cm	4 cms 5 cms	11 months	no	no	no	no	no	yes	9.5
5	14	unknow	ventral	no	no	no	3 cms	4 cms	48 months	no	no	no	no	no	yes	10
6	23	BXO	dorsal ventral	no	no	no	6 cms	7 cms 4 cms	20 months	no	no	no	no	no	yes	10

UP.430

Voiding Cystourethrogram in Squatting Position: A New Approach for Female Urethral Imaging

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Introduction and Objectives: Voiding cystourethrography (VCUG) in females is an important diagnostic tool in investigation and evaluation of female urethral disorders like urethral stricture, diverticulum and carcinoma. Traditionally during VCUG, the female patient is asked to void in the supine position after contrast instillation in the bladder. In many cases, the patient is unable to urinate in such position terminating the maneuver without diagnosis. Our hypothesis is that squatting position is the best way to do VCUG in females as it is considered natural voiding position. In this study, we aimed to improve the effectiveness of VCUG and diagnostic accuracy by asking the females to void in the squatting position under fluoroscopy.

Materials and Methods: Three female with age range of 48 to 68 years with suspected urethral strictures underwent uroflow and post-void residue assessment. After cleaning and draping the genital region with Betadine, a small feeding tube (6F) is passed through the urethra into the bladder followed by instillation of contrast media. When the urinary bladder is full, the patients were asked to void in the supine position. When the patients failed to void, they were asked to urinate in the squatting position. Images were taken during fluoroscopy. After VCUG, urethrocystoscopy was done to verify the findings of the urethrography. Oral antibiotic was given before procedure.

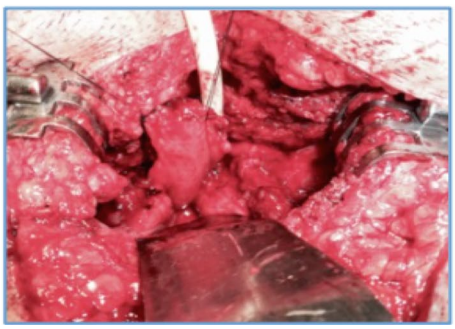
Results: The 3 patients were unable to void in the supine position, but they successfully urinated in the squatting position. VCUG showed the location and length of the urethral stricture precisely. This was further confirmed with urethrocystoscopy.

Conclusions: Female VCUG in squatting position is an applicable study for urethrography in females due to its natural position. Although cross sectional imaging like MRI and CT urethrography in females has been largely used nowadays in favor of classic VCUG, female VCUG still has its indications when those cross sectional images are contraindicated or unavailable.

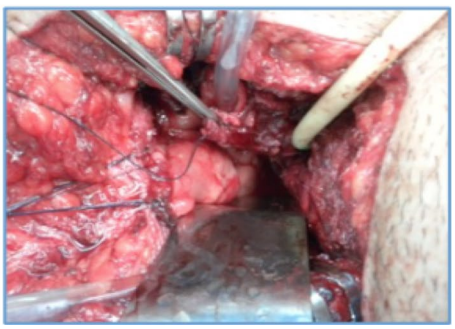
UP.425, Table 1.

	Group 1	Group 2	P value
Mean age (years)	23.94	29.21	0.67
Associated lesion	31.2 % (5 cases)	68.8 % (11 cases)	0.70
Anemia	22.6 % (7 cases)	77.4 % (24 cases)	0.40
Transfusion	33.3 % (6 cases)	66.7 % (12 cases)	0.52
Hypotension	61.1 % (11 cases)	38.9 % (7 cases)	0.005
Grade V	26.3 % (5 cases)	9.8 % (5 cases)	0.05
Néphrectomy	42.1 % (9 cases)	17.6 % (8 cases)	0.034

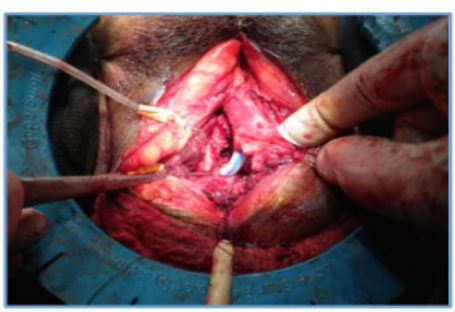
UP.426, Figure 1.

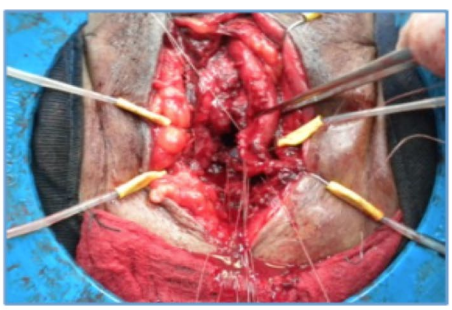


Flap on anterior bladder face



Neotube flap formation





Flap transposition into perineal space beneath symphysis pubis and its anastomosis with distal urethral segment

UP.431

Five Year Overview of Management of Renal Trauma at a Tertiary Hospital

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Introduction and Objectives: The incidence of renal trauma is 1-5% of all trauma cases, caused mainly by blunt and penetrating injuries. We present our 5-year experience in the management of renal trauma. To assess the severity and AAST grade of injury based on mode of injury. The outcome of conservative and surgical management of renal injuries were analysed in terms of complications and renal function.

Materials and Methods: All the patient with Renal Trauma between Janauary 2012 to December 2016 were included in the group (n=59). Fifty eight (98.3%) of the injuries were caused by blunt trauma, 1 (1.7%) by stab wounds. Evaluation was done by CECT scan to stage the injury based on AAST scoring. The patients were classified into group1 having renal injuries with grade I-III (n=34) and group2 with grade IV, V and penetrating injuries (n=25). Follow up evaluation was by clinical examination and by imaging. The significance of difference between two patient groups was assessed statistically by Chi-square test.

Results: There were 53 males and 6 females. Flank pain (44/59; 74.6%) and haematuria (44/ 59; 74.6%) were the common presentation. Thirty seven (62.7%) had associated non renal injuries. In group 2, 15 (60%) presented with h/o RTA, 9 (36%) was due to fall from height, and 1 (4%) due to stab injury. In group 1, all were managed conservatively except one, who required PCN. In group 2, one patient required nephrectomy, renorraphy was done for 1 patient and 1 patient underwent DJ stenting. Three mortalities due to associated non renal injuries were noted. During follow-up, in group 1, 2 patients required angioembolisation. In group 2, 1 patient developed renovascular hypertension, 1 patient developed retroperitoneal abscess which was drained percutaneously

Conclusions: Our study suggests that conservative management of renal injuries yields more favourable results. However patients with grade IV and V managed conservatively require long term follow up to look for complications.

UP.432

New Local Interposition Flaps for the Surgical Repair of Pelvic Fracture-Associated Recto-Urethral Fistula

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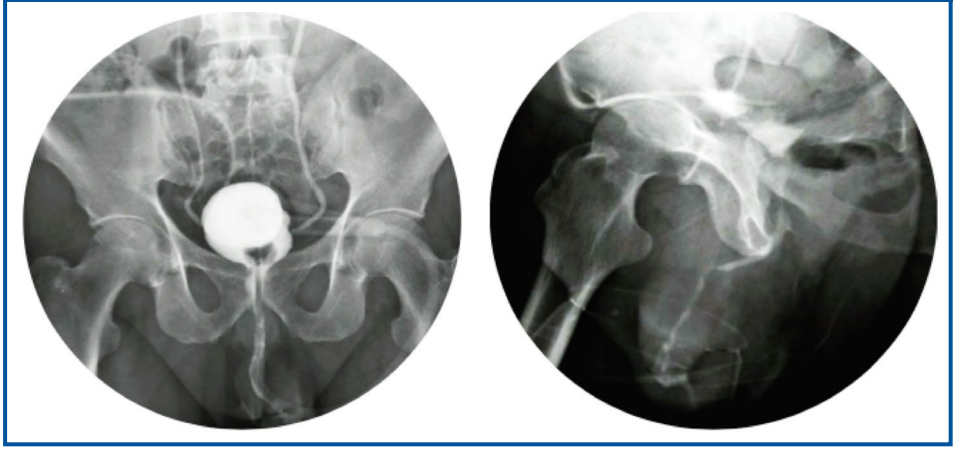
Introduction and Objective: Treatment of recto-urethral fistula associated with pelvic fracture urethral injuries (PFUI) is challenging due to the complexity of this condition. Surgical treatment of such cases involves closure of the fistula and anastomotic urethroplasty. Tissue interposition between urethra and rectum is a key factor for surgical success. Although, omentum and gracilis muscle flaps are the most com-

UP.426, Figure 2. Cystourethrography Following Removal of Urethral Catheter Reveals Low Bladder Capacity, Bilateral Bladder-Urethral Reflux And Permeable Urethra



monly used flaps, but they require the mobilization of tissues away from the fistula site. This can be associated with harvest complications, longer operative time and surgical difficulties related to flap mobilization to the fistula site. In this study, we have used local tissues flaps as tissue interposition and evaluated the success rate, complications and operative time.

Materials and Methods: Nine patients with recto-urethral fistula associated with PFUI were included in our study. Preoperative evaluation entailed retrograde urethrography, micturiting cystourethrogarphy, urethrocystoscopy and magnetic resonance urethrography to delineate the fistulous tract and soft tissues. Surgical correction of the fistulas involved cystoscopy, inserting guide wire in the fistula, elaborate anastomotic urethroplasty and closure of fistula. After the bulboprostatic anastomosis, flaps from surrounding perineal fat (analogous to Martius pad of fat) (n=5) and one limb of bulbospongiosus muscle (n=4) were used as tissue interposition between urethra and rectum. Postoperative follow up included uroflow, and voiding cystourethrography.

Results: Eight of the 9 cases had successful repair of the fistula with wide patent urethra and disappearance of urine leak per rectum. One case required redo surgery. All the flaps were harvested easily with no complications. The operative time for flap harvest and application ranged from 14 to 21 minutes with a mean of 16 minutes.

Conclusions: Local flaps use for repair of traumatic recto-urethral fistula is associated with high success rate. Additionally, the harvest of these flaps is easy to do, accompanied with no complications and has short operative time. They do not require high surgical skills for harvest and use.

UP.433

Salvage of Failed Skin-Inlay Urethroplasty Using Buccal Mucosal Graft: Feasibility Study with Description of the Technique and Outcome

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Introduction and Objective: Buccal mucosal graft urethroplasty (BMGU) has ever been an optimal option for urethral substitution. Nevertheless, no previous reports have explained its efficacy in the salvage of recurrent stricture after skin-inlay urethroplasty.

Materials and Methods: Seven patients with a history of skin-inlay urethroplasty presented with recurrent bulbar urethral stricture between January 2013 and January 2016. Patients' charts were reviewed as well as operative data and outcome. Failure was considered if patients required further instrumentation after re-do urethroplasty.

Results: Two patients presented with stones formed on the hairy skin used for urethral substitution. The remaining 5 patients were maintained on regular cystoscopic-guided urethral dilatation to keep urethral patency. In 2 patients, the hairy skin was totally excised and the urethral lumen was reconstructed by a two-stage procedure (Fig. 1). In another 3 patients, one-sided dorsal onlay BMGU was performed (Fig. 2). In more 2 patients, ventral onlay BMGU was performed for a more proximal bulbar strictures (Fig. 3). In the latter 5 patients, the skin edges were adequately trimmed to ensure the absence of hair follicles. All patients, apart from one required direct vision internal urethrotomy, experienced normal maximal urinary flow rate and patent urethra by retrograde urethrography and urethroscopy over a median follow-up of 6 months.

Conclusions: This series extends the use of BMGU to salvage failed skin-inlay urethroplasty whereby all trials of repair were exhausted.

UP.434

Comparison of Outcome of Buccal Mucosal Graft Urethroplasty as Primary Repair versus after Failed Direct Visual Internal Urethrotomy for Short Segment Bulbar Urethral Stricture

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Introduction and Objectives: This prospective clinical trial has been designed to compare the outcome of BMG urethroplasty for short segment bulbar urethral stricture between patients with previous failed DVIU and the patients who had no history of DVIU. The objective of the study was to determine stricture recurrence, PVR and flow of urine in between two groups.

Materials and Methods: The present study was conducted in the department of Urology, BSMMU between July'15 and February'17. Patients of short segment bulbar urethral stricture between 1.5- 3 cm without any previous DVIU were enrolled as study group (n=22) and patients with history of failed DVIU were included as control group (n=22). All the patients were followed upto 12 months after BMG urethroplasty and recurrence of stricture (by RGU and MCU), PVR and maximum urine flow rate (Qmax) in between two groups were compared.

Results: The patients included in the study were in the age range of 18-55 years. Most of the patients were between 30-40 years. Mean (±SD) age of the study group was 37.09 (±7.495) and that of the control group was 38.32 (±8.57). The mean (±SD) duration of symptoms of study group was 27.55 (±12.82) months and control group was 28 (±13.02) months. The mean (±SD) length of stricture of study group was 2.482 (±1.09) cm. and control group was 2.75 (±0.29) cm. The stricture recurrence rate was found significantly higher in control group than in the study group (p=0.042). Interestingly, there is significant (p=0.000) increase in stricture recurrence when BMG urethroplasty was done over the age of 45 years. The study group showed highly significant (0.000) decrease in post-operative PVR and significant (0.009) increase in post operative maximum urine flow rate than the control group as was assumed in the hypothesis.

Conclusion: The present study propose that BMG urethroplasty as primary repair for bulbar urethral stricture within a length of 1.5-3 cm in younger age group (upto 45 years) is very effective than BMG urethroplasty after failed DVIU cases. But long term multicentric trial is needed to further comment.

UP.435

Lichen Sclerosus of the Vulva after Male to Female "Penile Inversion" Vaginoplasty

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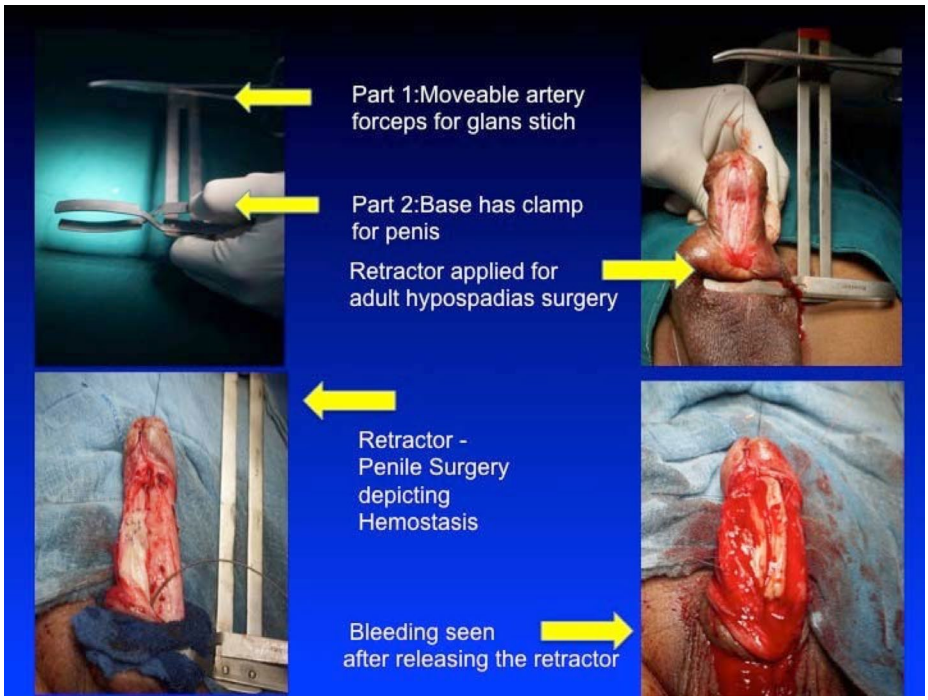
Introduction and Objective: Lichen sclerosus is a chronic cutaneous disorder with predilection for genital skin. In women, lichen sclerosus presents as vulvar discomfort, pruritus, bruising, bleeding, discharge, dysuria, or painful defecation. Diagnosis and treatment of lichen sclerosus is of utmost importance in the prevention of complications such as scarring, adhesions, atrophy, or long-term sexual dysfunction. We present male-to-female transgender patients with vulvar lichen sclerosus developed after penile skin inversion vaginoplasty.

Materials and Methods: From September 2011 to July 2016, seven patients were treated for vulvar lichen sclerosus developed after 11 to 37 months (mean 31 months) following male to female gender confirmation surgery. The age at diagnosis ranged 28 to 57 years (mean 45 years). There was no data or clinical signs of presence of the disease at the time of surgery.

UP.429, Figure 1.



The main symptoms were dry and itchy skin of the vulvar region, labial adhesions, painful sexual intercourse with consequential bleeding and problems during voiding. Use of topical corticosteroids resulted in limited improvement in the early period, but it was not effective as a curative treatment of the disease. Surgery included excision of affected skin and new vulvoplasty. Buccal mucosa grafts and urethral flaps were used for the prevention of new skin adhesions and vulvar closure.

Results: Biopsy specimens confirmed lichen sclerosis in all patients. In follow-up period (9 to 68 months) good esthetical and functional result was achieved in all patients. They were advised to apply periodical dilation of the vaginal introitus and topical corticosteroid treatment.

Conclusion: This is the one of the rare series to describe the vulvar lichen sclerosus in transwomen after gender confirming surgery as a possible cause of sexual dysfunction. Active surgical treatment and long-term follow-up of these patients is recommended to prevent recurrence of the disease.

UP.436

Complications in Pediatric Recipients Following Living-Donar Renal Transplantation

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Introduction and Objectives: To identify perioperative and long-term complications occurred in pediatric recipients of living-donor renal transplantation (Tx) with assessment of patient and graft outcomes.

Materials and Methods: Forty seven recipients [30 (63.8%) boys] were included retrospectively from May 2009 to December 2012. Extraperitoneal approach was used with extravesical ureteroneocystostomy. Vascular anastomosis was mostly to inferior vena cava and aorta. All patients were placed on prednisolone, mycophenolate mofetil, and cyclosporine or tacrolimus. All complications were reported.

Results: Age of recipients was 9.61 ± 3.24 (4-18) yrs. Thirty eight (81%) children were related to donor. Urological causes of end-stage renal-disease (ESRD) were 31.9% [8 (17%) posterior urethral valve, 5 (10.6%) vesicoureteric reflux (VUR), 2 (4.3%) urolithiasis]. Perioperative and long-term complications are presented in Table1. Urine leakage was treated by ureterovesical re-anastmosis (2 patient) or uretero-ureteral anastomosis (2 patients). VUR was detected (VCUG) in 3 patients with recurrent UTI and graft dilatation (obstruction excluded by radioactive renal scanning). Injection of bulking agents was performed in 2/3 patients. Glomerular filtration rate at last follow up was 95 ± 26 (55-188) mL/min/1.73 m2.The graft survival rate was 93.6% (due to irreversible early vascular rejection or renal vein thrombosis) while patient survival rate was 98% (1 patient died due to fulminant sepsis).

Conclusions: Meticulous anesthetic, surgical and immunosuppressive protocols, as well as strict perioperative monitoring with a regular follow up program help early detection of Tx complications and limit their effect on graft and patient survival.

UP.437

Comparing Three Data Mining Methods to Predict Kidney Transplant Survival

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Introduction and Objective: One of the most important complications of post-transplant is rejection. Analyzing survival is one of the areas of medical prognosis and data mining, as an effective approach, has the capacity of analyzing and estimating outcomes in advance through discovering appropriate models among data. The present study aims at comparing the effectiveness of C5.0 algorithms, neural network and C&RTree to predict kidney transplant survival before transplant.

Materials and Methods: To detect factors effective in predicting transplant survival, information needs analysis was performed via a researcher-made questionnaire. A checklist was prepared and data of 513 kidney disease patient files were extracted from Sina Urology Research Center. Following CRISP methodology for data mining, IBM SPSS Modeler 14.2, C5.0, C&RTree algorithms and neural network were used.

Results: Body Mass Index (BMI), cause of renal dysfunction and duration of dialysis were evaluated in all three models as the most effective factors in transplant survival. C5.0 algorithm with the highest validity (96.77%) was the first in estimating kidney transplant survival in patients followed by C&RTree (83.7%) and neural network (79.5%) models.

Conclusion: Among the three models, C5.0 algorithm was the top model with high validity that confirms its strength in predicting survival. The most effective kidney transplant survival factors were detected in this study; therefore, duration of transplant survival (year) can be determined considering the regulations set for a new sample with specific characteristics.

UP.438

Immunogenicity of Four Doses of Double-Strength Intramuscular Hepatitis B

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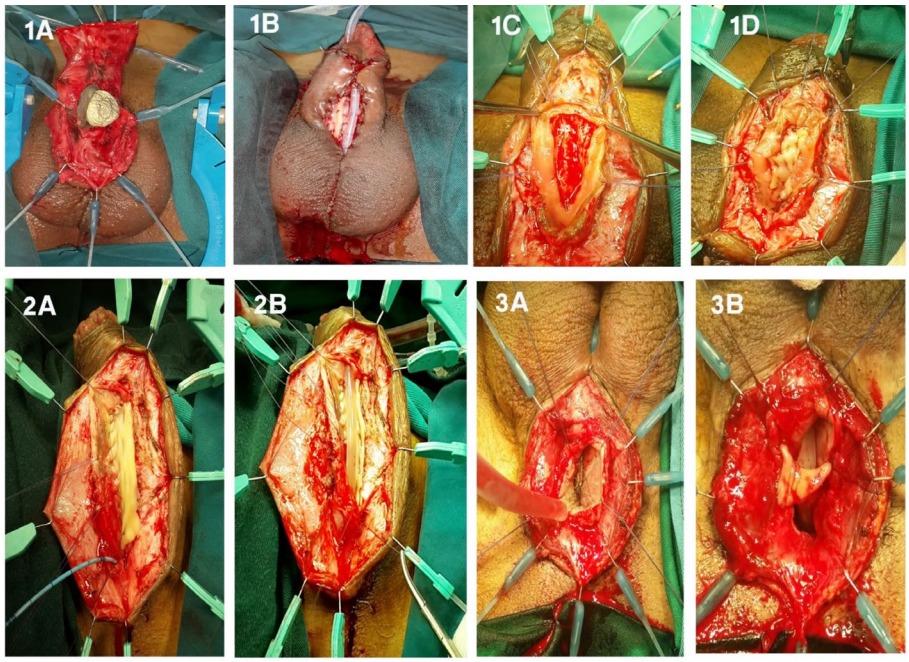
Introduction and Objective: Hepatitis B virus potentially accelerates graft rejection and mortality in renal transplantation population. Vaccination of graft candidates without prior immunization against HBV

UP.433, Figure 1.



1A: Stone is formed within a urethra reconstructed from hairy skin; **1B**: Excision of urethral skin and formation of new urethral plate using buccal mucosal graft; **1C**: Second stage with creation of a midline cleft and **1D**: augmentation with a second buccal mucosal graft
2A, 2B: Dorsal onlay buccal mucosal graft urethroplasty with urethral skin used as a floor
3A, 3B: Ventral onlay buccal mucosal graft urethroplasty after excision of hairy skin.

seems essential before transplantation but some candidates of transplantation have not received HBV vaccine at the time of receiving graft. We aimed to evaluate immunogenicity of an enhanced regimen (4 doses of double-strength intramuscular shots) after kidney transplantation in candidates without history of prior HBV vaccination.

Materials and Methods: This quasi-experimental study was conducted, 49 renal graft recipients in Sina Hospital (Tehran University of Medical Sciences, Tehran, Iran) of age >18, receiving graft within past 6 months and negative history of hepatitis B vaccination from 2010-2011. Participants received 40 µg intramuscular (IM) shots of a recombinant vaccine in the months 0, 1, 2 and 6. The titer of HBsAb was measured 8 weeks after the 3rd and 4th injections. Cases with HBsAb titers less than 10 mIu/ml were considered as non-responder while antiHBs≥10 mIu/ml was considered protective.

Results: The overall response rate was 57.14% (28/49 patients). Protective HBsAb titers were detected in 44.89% patients following 3rd dose and reached to 57.14% after injecting the 4th shots. The mean HBsAb titers were 50.00 (±88.35) mIu/ml and 229.45 (±356.56) mIu/ml after the 3rd and 4th shots respectively. Responders showed significantly younger age in comparison to non-responders (P=0.013). The vaccine was well tolerated in all patients with no side effects.

Conclusion: Regarding the relative good response rate following HBV vaccination in graft recipients, we suggest a post-transplantation enhanced regimen of 4-dose double-strength IM shots against HBV in patients without prior immunization.

UP.439

Developmental Potential of Vitrified Mouse Testicular Tissue after Ectopic Transplantation

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Introduction and Objective: Cryopreservation of immature testicular tissue should be considered as an important factor for fertility preservation in young boys with cancer. The objective of this study is to investigate whether immature testicular tissue of mice can be successfully cryopreserved using a simple vitrification procedure to maintain testicular cell viability, proliferation, and differentiation capacity.

Materials and Methods: In this experimental study, immature mice testicular tissue fragments (0.5-1 mm^2) were vitrified-warmed in order to assess the effect of vitrification on testicular tissue cell viability. Trypan blue staining was used to evaluate developmental capacity. Vitrified tissue (n=42) and fresh (control, n=42) were ectopically transplanted into the same strain of mature mice (n=14) with normal immunity. After 4 weeks, the graft recovery rate was determined. Hematoxylin and eosin (H&E) staining was used to evaluate germ cell differentiation, immunohistochemistry staining by proliferating cell nuclear antigen (PCNA) antibody, and terminal deoxynucleotidyl transferase (TdT) dUTP Nick End Labeling (TUNEL) assay for proliferation and apoptosis frequency.

Results: Vitrification did not affect the percentage of cell viability. Vascular anastomoses was seen at the graft site. The recovery rate of the vitrified graft did not significantly differ with the fresh graft. In the vitrified graft, germ cell differentiation developed up to the secondary spermatocyte, which was similar to fresh tissue. Proliferation and apoptosis in the vitrified tissue was comparable to the fresh graft.

Conclusion: Vitrification resulted in a success rates similar to fresh tissue (control) in maintaining testicular cell viability and tissue function. These data provided further evidence that vitrification could be considered an alternative for cryopreservation of immature testicular tissue.

UP.440

Urinary Tract Infections in Pediatric Recipients Following Renal Transplantation

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Introduction and Objective: To analyze risk factors for UTI following pediatric renal transplantation (Tx) and their impact on graft outcome.

Materials and Methods: Medical records of 54 recipients were reviewed retrospectively between March 2014 and March 2015.Tx was performed using extraperitoneal approach with extravesical ureteroneocystostomy. All patients were placed on prednisolone, mycophenolate mofetil, and cyclosporine or tacrolimus.Trimethoprim-sulfamethoxazole was given for 1year post-Tx. Post-Tx VUR was diagnosed by VCUG (performed for recurrent UTI or hydronephrosis).

Results: Mean recipient age was 12±3.4 (4-18) yrs. 39 (72.2%) children were related to donor. Causes of end-stage renal-disease (ESRD) were posterior urethral valve (PUV) (13%), VUR (9.3%), neurogenic bladder (1.9%), Wilm tumor (1.9%), nephrological causes (53.7%) and bilateral atrophic kidneys (unknown causes) (20.3%). Pre-Tx NN and/or augmentation cystoplasties were performed in 13 (24%) and 3 (5.5%) children, respectively. Twenty two (40.75%) children had post-Tx UTI. Fifty four percent of UTI episodes were in first 6 months post-Tx. Analysis of different risk factors revealed a significantly higher incidence of post-Tx UTI in children with [9/14 (64.3%)] vs without [13/40 (32.5%)] pre-Tx UTI (p=0.037) and in children with [7/9 (77.8%)] vs without [15/45 (33.3%)] post-Tx VUR (p=0.023). No significant difference in UTI was found with gende r [10/18 (55.6%) in girls vs 12/36 (33.3%); p=0.117], induction immunosuppression [19/45 (42.2%) with ATG vs 3/9 (33.3%) with basiliximab; p=0.723] or acute rejection episodes (ARE) [14/36

(38.9%) in children without ARE vs 8/18 (44.4%) in children with ARE; p=0.695]. At end of follow-up (1-5yrs), graft survival rate was 51/54 (94.4%) with no mortalities. There was no significant difference (p=0.236) in glomerular filtration rate (GFR) in children with (69.48±31.28 ml/min/1.73m2) and without (78.91±25.65ml/min/1.73m2) UTI.

Conclusions: UTI is common post-Tx especially during first 6months. History of pre-Tx UTI or post-Tx VUR is significant risk factors. There is a higher but not statistically significant tendency toward UTI in girls. UTI did not affect significantly GFR.

UP.441

Regulatory T-Cell Subset Analysis and Profile of Interleukin (IL)-10, IL-17 and Interferon-Gamma Cytokine-Producing Cells in Kidney Allograft Recipients with Donor Cells Infusion

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Introduction and Objective: This pilot study aimed to assess whether the perioperative infusion of donor bone marrow cells (DBMC) in renal allograft recipients can affect the appearance of peripheral regulatory T-cell subsets and the profile of cytokine-producing cells [interferon-gamma (IFN-c), interleukin (IL)-17 and IL-10] 2 years after transplantation.

Materials and Methods: Fresh blood samples were collected from 14 kidney recipients who received infusion and from 13 kidney recipients without infusion who served as controls at the end of the second post-transplantation year. Initially the percentages of CD4, CD25, FoxP3, T cells and CD3, CD8, CD28- T cells were quantified using flowcytometry. Thereafter, the frequencies of IL-10-, IL-17- and IFN-c-producing cells were determined separately using the ELISPOT technique with peptides corresponding to mismatched donor HLA-DR molecules and phytohemagglutinin (PHA).

Results: The mean numbers of IFN-c- and IL-17-producing cells in response to PHA were lower in infused patients than in controls (P = 0.02 and P = 0.18, respectively); however, an increased frequency of IL-10-producing cells was observed compared to controls (P = 0.07). Furthermore, the ratio of IL-10/IFN-c-producing cells was significantly higher in the DBMC-infused group versus controls (P = 0.01). There was a negative correlation between the percentages of CD3? CD8? CD28-T cells and IL-17-producing cells in the infused group (r = -0.539, P = 0.04). The mean levels and the frequency of microchimerism within the first post-transplantation year were also significantly higher in infused patients than in controls (P = 0.007 and P = 0.001, respectively).

Conclusion: Our findings suggest that DBMC infusion could partially stimulate the regulatory mechanisms against alloimmune responses in kidney allograft recipients.

UP.442

Predictive Values of Urinary Interleukin 18 and Neutrophil Gelatinase-Associated Lipocalin for Delayed Graft Function Diagnosis in Kidney Transplantation

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Introduction and Objective: Delayed graft function is a main complication after deceased donor kidney transplantation that adversely affects graft outcome. Difficulties in prediction and early detection of delayed graft function have hindered the ability to perform proper therapeutic interventions. We investigated whether measuring urinary interleukin 18 and neutrophil gelatinase-associated lipocalin as markers of ischemia reperfusion injury could predict delayed graft function in deceased donor kidney transplant patients.

Materials and Methods: We studied 69 patients undergoing kidney transplantation from deceased donor during early October 2013 to December 2014 at the Urology Research Center, Sina Hospital, Tehran University of Medical Sciences and Tehran, Iran. Serial urine samples at 2, 24, and 48 h after transplantation were analyzed for interleukin 18 and neutrophil gelatinase-associated lipocalin levels.

Results: Thirteen patients (18.9%) developed delayed graft function. Urine interleukin 18 to urine creatinine ratio was significantly higher in patients with delayed graft function compared to those with non-delayed graft function, at 2 (P=0.003), 24 (P<0.001) and 48 h (P=0.018) points. The levels of neutrophil gelatinase-associated lipocalin to urine creatinine ratio were significantly higher in the group with delayed graft function at the 24 (P=0.004) and 48 h (P=0.015) points. The receiver–operating characteristic curve analysis suggested that both urinary biomarkers at 24 h after transplantation had better accuracies for prediction of delayed graft function. In multivariate analysis, only urinary interleukin 18 to urine creatinine ratio improved the ability of clinical model for predicting delayed graft function.

Conclusion: Urinary interleukin 18 to urine creatinine ratio at 24 h posttransplantation, along with traditional markers such as relative fall in serum creatinine, urine output and other risk factors for delayed graft function, increased the ability to predict delayed graft function.

UP.443

Learning Curve of Hand-Assisted Laparoscopic Donor Nephrectomy

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Introduction and Objective: Hand-assisted laparoscopic donor nephrectomy (HALDN) offered advantages in terms of better control of intraoperative bleeding and reduction of warm ischemia time. In this study we analyzed the learning of HALDN.

Materials and Methods: From Sep. 2013 to Afr. 2016, the first 201 consecutive donors (112 expert surgeon, 89 newbie surgeon) operated on using HALS were included in the study. The primary outcome measure was

UP.436, Table 1. Comparison of Postoperative Data of Donors and Recipients

	Group A (No =50)	Group B (No =50)	P-value
Donor Hospital Stay (days):			
Mean (range)	1.74±0.44(1-2)	1.76±0.43(1-2)	0.822
Median (IQR)	2 (1-2)	2 (2-2)	
Donor Creatinine (ON discharge)			
Mean (range)	0.946±0.183 (0.6-1.3)	0.924±0.180 (0.6-1.2)	0.711
Median (IQR)	1 (0.8-1.1)	1 (0.8-1.1)	
Pain score:			
Score 1	2 (4%)	4 (8%)	1.000
Score 2	1 (2%)	1 (2%)	
Recipient Hospital Stay (days):			
Mean (range)	6.380±1.193(5-12)	6.52±0.814(5-9)	0.074
Median (IQR)	6(6-7)	6(6-7)	
Recipient Creatinine on discharge:			
Mean (range)	1.05±0.21(0.7-1.4)	0.996±0.211(0.7-1.4)	0.187
Median (IQR)	1 (0.9-1.2)	1 (0.8-1.2)	
Complication rate:	0%	0%	1.000

warm ischemic time (WIT). Secondary outcome measures included: total operation time, estimated blood loss (EBL), length of hospital stay and surgery related complications. We used the cumulative sum (CUSUM) method to generate learning curves and statistical analysis was conducted using SAS, version 9.2.

Results: Baseline characteristics were similar in both group, except for number of renal arteries (p=0.02). Except for WTI, all operative and convalescence parameters of donors and graft outcomes were similar between two groups, as were total operation time (p=0.140), EBL (p=0.494), hospital day (p=0.144), overall rates of intraoperative and postoperative complications (p>0.05). But we observed a significant difference in WIT among two groups (p=0.027). On visual assessments of the CUSUM plots, a downward inflexion point for decreasing warm ischemic time was observed after 4 cases.

Conclusion: HALDN has a relatively short learning curve without requiring any need for further laparoscopic training. Similar results may be expected when newbie urologists who trained minimal invasive surgery fellowship perform HALDN.

UP.444

Long Term Follow Up of Patients Performed Enterocystoplasty and Ureterocystoplasty before Kidney Transplantation: A Single Center Experience

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Introduction and Objectives: Augmentation cystoplasty either with the use of an intestinal segment (enterocystoplasty: EC) or dilated ureter (ureterocystoplasty: UC) before or after renal transplantation is an option for patients with end-stage renal disease who are candidates for renal transplantation and have low capacity and poorly compliant bladders. The aim of this study is to compare these two methods of augmentation before kidney transplantation and their long term outcome in kidney recipients with bladder dysfunction.

Materials and Methods: During a 27-year period (1988-2015), 2450 renal transplantation were performed in our center by a fixed team. In 27 patients (group A) with mean age of 19.5 years, EC and in 16 (group B) with mean age of 10.2 years, UC were performed before renal transplantation. These two groups were compared according to their kidney functions, graft and patient survivals, mortality and morbidity, and the frequency of urinary tract infections (UTI).

Results: There was normal graft function in 19 of group A and 12 of group B during a mean follow-up of 125 months. The mean serum creatinine in the follow-up was 1.85±0.21, 1.41±0.12 in groups A and B, respectively. Number of episodes of febrile UTI requiring hospitalization was 37 and 9 in groups A and B, respectively. UTI and urosepsis were significantly more frequent in group A than groups B (p<0.05). Graft loss was seen in 8 patients of group A (5 due to chronic rejection and 3 of recurrent pyelonephritis) and 4 of group B (all due to chronic rejection). Eleven patients of group A but one patient in group B required clean intermittent catheterization (CIC) for bladder emptying. Bladder complications were seen in 5 patients of group A (pyocystitis in 2 and bladder stone in 3 cases) and 2 patients of group B (cystitis cystica). Two patients of group A were died, one due to cardiovascular problems and the other due to urosepsis. Also one patient in group B was died due to cardiovascular problems. No statistically significant differences were observed among the two studied groups in terms of 1, 5, 10 and 15 year patient survivals.

Conclusion: Although both EC and UC are recommended before renal transplantation for reconstruction of the lower urinary tract but UC had lower complication rates and also the quality of life was better in this method of treatment. Use of each method should be individualized depending on specific conditions of recipients.

UP.445

Results of En-Bloc Kidney Transplantation from Pediatric Deceased Donors to Adult Recipients: Six Years Experience

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Introduction and Objective: The organ shortage is a main concern for kidney transplantation. Using pediatric deceased donors either as single or in en block manner is one way to solve this problem. The objective of this study is to review the results of our 21 en-bloc pediatric deceased kidney transplantation to adult recipients.

Materials and Methods: From May 2010 to May 2016, 472 deceased kidney transplants have been performed in our transplant centers. Twenty one of these were en- bloc pediatric kidney transplantations to adult recipients. The age of all pediatric deceased donors was less than 5 years and their weight were less than 15 kilograms. We reviewed the results including clinical findings, complications, serial creatinine levels and kidney size using ultrasonography and dimercaptosuccinic acid (DMSA) renal scan in a follow-up of 2 to 42 months.

Results: Out of our recipients 10 (47.6%) were male. Mean age of them were 28.85±10.29 years. Mean size of graft were 6.94±0.58 preoperatively that changed to 8.52±0.98 and 10.20±1.20 in 3 and 24 months follow-up respectively. Mean serum creatinine level was 1.61±0.39 mg/dl at 1 year and 1.17±0.28 at 2 years. Two patients (9.5%) died, one of motor vehicle accident and the other of myocardial infarction. Two-year patient and graft survivals were 90.5%.

Conclusions: En- bloc pediatric deceased kidney transplantation is a safe and acceptable alternative for adult recipients with acceptable patient and graft survivals.

UP.446

The Effect of Autologous Bone Marrow Stem Cell Transplantation on Graft Function in Deceased Kidney Recipients

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Introduction and Objective: Renal transplantation is the best treatment option in end stage renal disease (ESRD). However acute rejection and graft dysfunction remain major challenges in the worldwide, even in the advent of new immunosuppressive drugs. The

UP.440, Table 1. Risk Factors for UTI Following Renal Transplantation and their Effect on Graft Function

	Children with UTI 22 (40.75%)	Children without UTI 32 (59.25%)	P
Recipient sex:			0.117
Boys	12/22 (54.5%)	24/32 (75%)	
Girls	10/22 (45.5%)	8/32 (25%)	
Pre-Transplantation UTI	9/22 (40.9%)	5/32 (15.6%)	0.037 *
Post-Transplantation vesicoureteric reflux	7/22 (31.8%)	2/32 (6.2%)	0.023 *
Induction immunosuppression:			0.723
ATG	19/22 (86.4%)	26/32 (81.2%)	
Basiliximab	3/22 (13.6%)	6/32 (18.8%)	
Acute rejection episodes:			0.369
No	14/22 (63.63%)	22/32 (68.75%)	
1 attack	8/22 (36.36%)	8/32 (25%)	
2 attacks	0	2/32 (6.25%)	
GFR at last follow-up (ml/min/1.73m2)	69.48 ± 31.28	78.91 ± 25.65	0.236

Data are presented as mean ± SD (range) or number (%) as appropriate * Significant

novel cell based anti rejection treatments have been studied by using different stem cell sources. In this study, transplantation of autologous bone marrow derived total nucleated cells is used to improve the cadaver kidney graft function.

Materials and Methods: Eighteen ESRD patients who were candidates for deceased kidney transplantation divided in two groups (group A and B). There was no significant difference among their sex, age, weight and type of dialysis. The two kidney of one cadaver were used for two recipients. Before transplantation, randomly, autologous bone marrow aspiration was done for one recipient. Then the transplantation was done for both of recipients. The total nucleated cells were separated and infused intravenously during and after the transplantation, respectively. In post transplantation, 6 hours diuresis, delay graft function (DGF), creatinine (after 1 week, 2 weeks and 3 months), cyclosporine level (after 2 weeks) were measured in bone marrow treated group (A: 9 patients) and non bone marrow treated group (B: 9 patients).

Results: A significant increase in diuresis, significant decrease in DGF, significant decrease after 1 week and 2 weeks and marginally significant decrease after 3 months in creatinine were seen in group A in comparison to group B. Also no significant differences were seen in cyclosporine blood level (2 weeks), and operation time. 2 patients had CMV infection in group B, but none in group A.

Conclusion: The transplantation of autologous bone marrow cells in deceased kidney recipient is safe and significantly decreases early graft dysfunction. Further clinical trial is needed to confirm these promising results.

UP.447

A Prospective Study Comparing Outcomes and Quality of Life after Laparoscopic Donor Nephrectomy versus Open Donor Nephrectomy

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Introduction and Objective: This study was done to compare our initial results of laparoscopic and open donor nephrectomy and compare our results with the published literature.

Materials and Methods: Between January 2013 and January 2015, a total of 224 patients were operated (laparoscopic - 100 patients, open - 124 patients). Data recorded included demographic profile, pre-operative and intra-operative variables, post-operative complications, hospital stay, pain, quality of life and graft outcome. The cost for each procedure and patient satisfaction scores were also calculated. Statistical analysis was done using STATA and p value < 0.05 was considered significant.

Results: The demographic profile and pre-operative quality of life scores were comparable between the two groups. Laparoscopic group had a longer operative time (108.1 ± 26.5 min vs 86.4 ± 13.9 min) and warm ischemia time (3.5 ± 1.3 min vs 1.8 ± 0.6 min) compared to open group. The average blood loss was lower in laparopscopic group (130.1 ± 54.9 ml vs 173.7 ± 48.8 ml). Learning curve of laparoscopic donor nephrectomy was achieved at 20 cases. Laparoscopic group had significantly lower postoperative pain at all time points (p value 0.001, figure 1). Intraoperative visceral injuries were slightly higher in laparoscopic group (10 patients vs none in open group) but the incidence of vascular injuries was similar (6 patients in each group). There were no mortality or reoperation in either group. Serum creatinine values in both groups reached baseline at 3 months follow up (figure 2). Open method was more cost effective. Quality of life, cosmesis and patient satisfaction was significantly better after laparoscopic surgery. Recipient creatinine and the incidence of delayed graft function, acute tubular necrosis and ureteric complications did not differ between the two groups (p value > 0.05).

Conclusion: In conclusion, laparoscopic donor nephrectomy had similar outcomes in terms of intraoperative and postoperative donor complications and recipient and graft outcomes as compared to open surgrey. It also offered the advantage of significantly less early postoperative pain and a better quality of life and cosmesis.

UP.448

Effect of Different BMI Groups on Outcome of Live Related Renal Transplant: A Single Transplant Center Study

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Introduction and Objective: We did this study to find the effect of recipient BMI on Postoperative transplant outcome.

Materials and Methods: We performed an observational retrospective study of all recipients of kidney transplants at our center from January 1, 2010 to December 31, 2016 to determine the outcome of renal transplant in four different BMI groups (according to WHO classification) .Data variables were collected by chart review and all patients analyzed for age, cause of renal failure, stent placement ,number of vessels, delayed graft function, per op and post op complications and hospital stay .Groups were made as Recipient BMI was categorized as <18.5 kg/m2(underweight), 18.5 to 24.9 kg/m2 (normal weight), 25 to 29.9 kg/m2 (over weight), more than 30 kg/m2 (obese).

Results: There were 22 patients in underweight group, 70 patients in normal weight category, 34 patients in over weight and 14 patients in obese group. Mean age was 26.68±10.64 years, 32.37± 12.3 years, 40.39±10.24 years and 43.07±12.9 years respectively in these groups. Stent was placed in 11 (50%), 32 (45%), 10 (29.4%) and 7 (50%) patients in the respective groups. Graft function was assessed in terms of brisk urine output and creatinine normalization within 5 days set as upper limit. Brisk urine output was observed in 20 (90.9%), 63(90%), 29 (85.2%) and 10 (71.4%) patients in each group respectively. Creatinine was normalized in 14 (63.6%), 43 (61.42%), 21 (61.7%) and 5 (35.7%) patients in the respective groups. Gender wise we noted that obesity was more prevalent in male patients but this may be due to more male recipients presenting to our center. In complications we noted that Reopen surgery for suspected twist of renal graft vessels was undertaken in 1 (4.5%), 1 (1.42%), 3 (8.8%) and 1 (7.1%) patients respectively. Post op UTI was seen in 3 (13.6%), 5 (7.1%), 5 (14.7%) and 2 (14.4%) patients respectively. Chronic graft loss was seen in 5 (22.7%), 6 (8.5%), 2 (5.8%) and 2 (14.2%). Acute graft loss was seen in 1 patient in each of the normal and overweight group.Hospital stay was prolonged in obese group.

Conclusions: No gross difference was seen between the respective groups in terms of overall transplant outcome but delayed graft function was seen more in the obese patients.

UP.449

Comparison of CT-measured Split Renal Volume and Split Renal Function by DTPA Cintigraphy for the Prediction of 12 Months Living Donor Renal Function

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Introduction and Objective: Despite recognized advantages over deceased-donor kidney transplant, living donor nephrectomy represents a well-known risk factor for decreased renal function. Increasing numbers of living donor kidney transplantations (KT) calls for better knowledge about donor outcomes and risks, and emphasizes the need for precise prediction of living donors long-term renal function impairment. We aimed to evaluate and correlate the living donor DTPA-measured and CT-measured split renal function in the prediction of living donor renal function at 12 months post-nephrectomy.

Materials and Methods: Retrospective analysis of 147 living donor KT pairs performed by a single academic institution between May 2008 and March 2016. All living donors underwent preoperative DTPA Cintigraphy and renal imaging with 3D helicoidal CT. Renal volumes were obtained for each donor using the voxel counting technique. Pre-KT and 12-months donor eGFR was calculated using CKD-EPI equation. Split renal function was determined by DTPA-measured split function (%DTPA) and by CT-measured split volume (%CT). Correlation between both living donor split renal function approaches and donor renal function at 12 months was performed using Pearson Correlation and Receiver Operating Characteristic (ROC) curves.

Results: Mean donor and recipient age were 47.1±10.4 and 39.2±13.2 years, respectively. Donor mean total kidney volume was 318.8±42,4cc/1.73m2, with a mean CT-measured non-transplanted kidney split volume of 49.0±4.0%. Mean DTPA-measured non-transplanted kidney split function was 50.7±3.6%. Both %DTPA and %CT split renal function methods (using EPI equation) showed a strong correlation with donor renal function at 12 months ($p<0.001$). Analyzing the correlation between each pre-transplant split renal function technique of the non-transplanted kidney (calculated by %CT or %DTPA and EPI donor eGFR), and donor renal function at 12 months, %CT estimates presented the highest Pearson's correlation coefficients (r) – 0.659 vs 0.618. In addition, a cut-off of <70 mL/min/1.73 m2 was used to define impaired donor renal function at 12 months. Performing a ROC analyses between the pre-transplant split renal function (according to %DTPA or %CT and EPI eGFR) and impaired donor

renal function, we observe that both split function estimates were highly predictive of donor renal function outcome (p<0,001) - AUC eGFR(EPI)*%DTPA=0.802; AUC eGFR(EPI)*%TC=0.782.

Conclusion: Preoperative CT-measured split renal volume proved to be as correlated with donor eGFR at 12 months as split renal function by DTPA, presenting even better correlation coefficient results. CT-based split function has shown to be also a good predictor of impaired donor renal function at 12 months. CT-based split renal function estimate seems to correlate with donor kidney function post-nephrectomy as well as renal cintigraphy-based method. These results raise the question about renal cintigraphy expendability in living-donor evaluation considering that it adds limited information to CT results.

UP.450

Comparing the Outcome of Right or Left Kidney Donation or Side of Kidney Implantation in Transplantations from Deceased and Living Donors

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Introduction and Objective: The aim of the present study was to determine whether side of kidney donation or side of kidney implantation or their combination could be predictive of subsequent kidney transplant outcomes in transplantations from living and deceased donors.

Materials and Methods: All kidney transplantations in our department from June 1993 to November 2015 were included. Data was prospectively gathered and stored in database and used for analysis. Serum creatinine was measured at postoperative days during hospitalization and then at follow up visits and was used for determination of kidney function.

Results: A total of 3334 transplantations were investigated during the study period. Mean serum creatinine was highest at the 3rd postoperative day and gradually decreased to1.4±0.7 mg/dL in the 3rd postoperative month and remained rather stable up to 12 months after transplantation. Recipients' 3rd and 7th day creatinines from right donated kidneys were 1.8±0.6 and 1.9±1.5 mg/dL when donated kidneys were implanted in the right side of the recipients versus 2.9±1.9 and 2.2±2.1 mg/dL when donated kidneys were implanted in the left side of the recipients (3rd day p-value<0.001 and 7th day p-value=0.05 respectively). This statistically significant difference was no longer observed in the 1st month after operation and thereafter. After employing multivariable statistical model and introduction of donor age, recipient age, sequence of transplantation, and type of donor (deceased versus living) as potential confounding variables, side of donation was still predictive of 7th day postoperative creatinine (p<0.001) while side of implantation was not (p=0.95).

Conclusion: In conclusion, we state that early graft function was better in case of right kidney donations when the kidney was implanted into the right side of the recipient.However, there was no apparent impact on either graft survival or function beyond the first month after transplantation in left or right side kidney recipients.

UP.451

Improving the Quality of Donated Kidney: Left Multiple-Artery versus Right Single-Artery Kidney Donation

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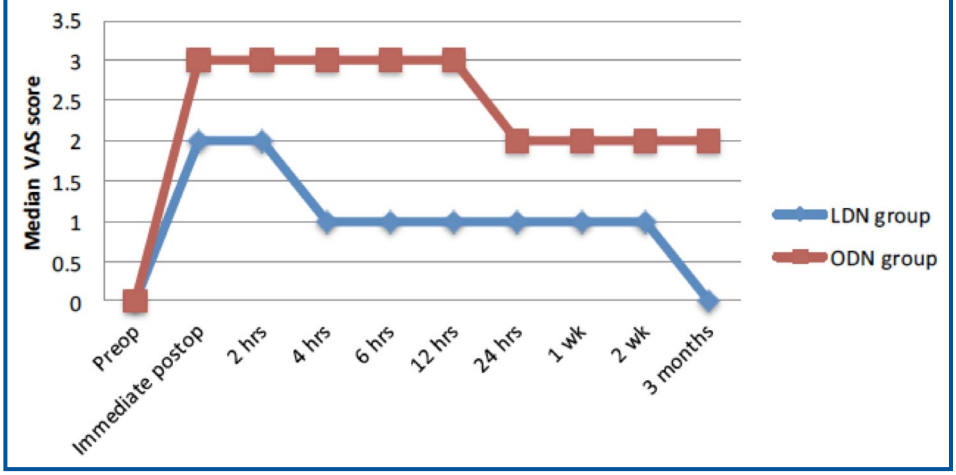
Introduction and Objective: The current approach for living kidney donation is to preserve the best kidney for the donor, harvesting the other. Due to the shorter vein and the greater incidence of venous thrombosis in right allografts, left kidneys are frequently elected. However, left arterial anatomy may be complex, rendering the transplantation demanding. For this reason, analysing outcomes after left multiple-artery kidney (LMAK) and right single-artery (RSAK) harvest could aid in decision-making.

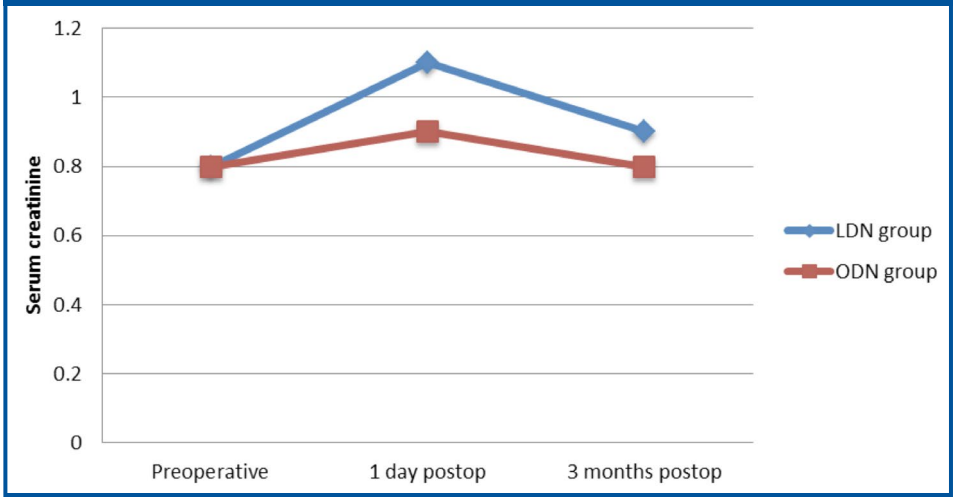
Materials and Methods: Fifty-six cases: 28 LMAK (14 open and 14 laparoscopic) and 27 RSAK (13 open and 14 laparoscopic) were compared regarding operative time, warm ischemia time, post-operative complications, incidence of venous or arterial thrombosis and hospital stay of donor and receptor. Graft function was evaluated in the short-term considering Acute Tubular Necrosis (ATN) episodes in the first week and Delayed Graft Function (need of Renal Replacement Therapy). Long-term outcomes were assessed by Serum Creatinine (SCr) and Glomerular Filtration Rate (GFR) through the first year after transplantation.

Results: The mean operative time did not differ significantly between LMAK (140±32 min) and RSAK (127±36 min) as well as warm ischemia time (264±179 vs 211±72 sec), donor hospital stay (5.0±2.5 vs 4.6±1.1 days), receptor hospital stay (12.1±9.6 vs. 13.0±6.9 days) and post-operative complications (p=0.76). Comparing open and laparoscopic procedures there were also no difference between the groups. ATN was superior in RSAK (67 vs 39% p=0.01) although there were no significant difference in the SCr and GFR through the first year of transplantation. Mean first year SCr in LMAK receptors was 1,3mg/dl vs 1,4mg/dl in RSAK (p=0.4) and GFR was 77ml/m2 in LMAK versus 75ml/m2 in RSAK receptors (p=0.7). There

UP.447, Figure 1. Comparison of Postoperative Pain in LDN Group vs ODN Group



UP.447, Figure 2. Comparison of Donor Serum Creatinine between LDN Group and ODN Group



were 2 cases of vein thrombosis in RSAK with graft loss and no cases of arterial thrombosis.

Conclusion: This is the first study comparing LMAK with RSAK living donor nephrectomies. Herein we can conclude that the safety and efficacy of LMAK do not differ. Moreover we recorded two cases of renal vein thrombosis after RSAK transplantation without any increment in cases of arterial thrombosis in LMAK. Despite being technically demanding LMAK could be a good option for living donation expanding the donor pool.

UP.452

Mini-Incision Living Donor Nephrectomy and Trans-Peritoneal Laparoscopic Nephrectomy: There Will Be Place for New Evidence?

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Introduction and Objective: Laparoscopic donor nephrectomy (LDN) is generally considered a better option than open donor nephrectomy (ODN) in renal transplantation associated with better cosmetic results, lesser post-operative pain, and faster recovery. LDN has a longer learning curve and was associated with increased operative time and warm ischemia time when compared with ODN. Herein we compare mini-incision donor nephrectomy (MDN) with LDN approach regarding short- and long-term outcomes.

Materials and Methods: Two hundred and fifty one patients, who underwent donor nephrectomy using MDN (n = 141) and LDN (n = 110) performed by the same surgical team were compared with respect to operative time, warm ischemia time, complications and hospital stay. Graft function was evaluated on the short-term considering Acute Tubular Necrosis (ATN) episodes during the first week and Delayed Graft Function. Long-term outcomes were assessed by Serum Creatinine (SCr) and Glomerular Filtration Rate (GFR) through the first year after transplantation.

Results: Demographic data was analysed (table 1). The mean operative time for MDN (120±29 min) was not significantly different when compared to LDN (127±32 min, p=0.08). Laparoscopic donors had a shorter warm ischemia time (238 vs 310 sec, p=0.01), hospital stay (4.3 vs. 5.9 days, p<0.001) and postoperative complications (p=0.03). The incidence of graft ATN was superior in the MDN (89 vs 25%, p<0.001) without significant difference regarding the long-term outcomes (1st year SCr 1.38 vs 1.33mg/dL, p=0.7 and 1st year GFR 63.7 vs 63.1 ml/m2, p=0.9).

Conclusion: Opposing the most recent meta-analyses we had shorter warm ischemia times in laparoscopic comparing with the open nephrectomies without increasing the duration of procedure. With the growing experience in high volume centres with specialized teams, LDN could be considered the most suitable technique for living donor nephrectomy with better results in the short-term, without difference in long-term outcomes.

UP.453

Sexual Functioning and Quality of Life in Patients Before and after Live Related Kidney Transplant. Single Centre Study

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Introduction and Objective: Studies regarding the sexual and marital relationship problems experienced by many renal transplant patients are lacking in this region. Research on the sexual functioning of these patients and the consequences for relationship satisfaction and quality of life is lacking in this country and internationally as well.We aimed in this study to see thedifference in sexual and marital relationship in patients who underwent renal transplant.

Materials and Methods: Total of 100 male patients who underwent renal transplant from 2015 to 2016 were included in the study. Only 60 out of them responded well to our questionnaire. Mean age of the patients was 42.32±10.36years. We sent them a questionnaire (SFCE) in emails and on phone interview. They were evaluated for sexual functioning, overall quality of life.Proformas were filled and then spss version 16 was used for statistical analysis.

Results: It was found that the general health ,emotional and social parameters improved in most of the patients as compared to the dialysis but still a bit less than the pre dialysis scores. The sexual functioning showed improvement with 58% patients had increased libido as compared to the pre transplant period(dialysis) almost same as at time when they were healthy. Erectile dysfunction was found in 3% patients who already had an element of ED before transplant. The potency was better in 76% 0f the patients and 23% patients complained of decreased latency time (premature ejaculation) ranging from 30 seconds to 1 minute. Sixty six percent of the married males had once a week coitus and rest had 2 or more than two times a week.(p value 0.001).

Conclusion: Sexual functioning and overall quality of life was improved significantly after transplant. The marital life satisfaction was improved after the transplant.

UP.454

Multiple Renal Arteries in Kidney Transplantation: Is it a Problem Nowadays?

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Introduction and Objective: Kidney transplantation remains the gold standard treatment of end-stage renal disease. Shortage of donors led to an increasing need of compatible organs: grafts with multiple renal arteries (MRA) is one of the solutions, although being a potential risk factor that can impair outcomes. The aim of this study is to provide a view of our experience with MRA grafts in renal transplantation and compare the outcome between MRA and single renal artery (SRA) groups.

Materials and Methods: Retrospective study of 2989 kidney allograft recipients in our department between January 1980 and February 2017: demographic characteristics and outcomes were compared between recipients of grafts with MRA (648 patients) and SRA (2341 patients). Statistical analysis was done using IBM SPSS Statistics 22: chi-square, independent sample t-test and Kaplan Meier tests were used with a p value of 0.05.

Results: The donors were cadaveric in 96.1% and live in 3.9%. The recipients of MRA group had a previous higher time on dialysis (50.3±43.1 vs 46.30±37.5 months, p: 0.04), a longer operative time (2.43±0.57 vs 2.28±0.49 hours, p<0.001), a higher cold ischemia time (19.08±6.05 vs 18.34±6.17 hours, p: 0.04) and more blood transfusions (1.80±0.8 vs 1.65±0.8 Units, p: 0.01) than the recipients of SRA kidney recipients. In the MRA group, *ex-vivo* bench surgery techniques, *in vivo* sequential anastomosis and mixed techniques were used. The different options didn't affect the outcomes. The rate of delayed graft function, surgical complications, length of hospital stay, acute and chronic rejections, graft loss, death with functioning graft and death cause was not statistically different between groups. The follow-up was not statistically different: MRA (8±7.3 years) vs SRA (7.7±6.6 years) group (p: 0.1). The current state of the patient (alive, death or on dialysis) was not dependent on the number of arteries used.

Conclusion: MRA grafts were not a problem in our unit: despite of having a longer operative time, higher cold ischemia time and blood transfusions rate, the short and long-term outcomes were comparable between groups.

UP.455

Donation in Asistolia (Maastricht Iii). Are the Results Comparable with Brain Dead Donors?

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Introduction and Objective: The inability to meet the needs of patients on the transplant waiting list, with the donation in brain death and the living donor, has led to the development of alternative programs in order to increase the number of donor organs. In our Region, we have implanted the donation in controlled asystole with Maastricht type III donors, that is, those patients who died after cessation of life support treatment (LTSV). The data presented below correspond to patients transplanted with Maastricht type III donor organs.

Materials and Methods: This donation model was launched in February 2015 after the design of a multidisciplinary extraction and management protocol approved by the Hospital Ethics Committee. By the same, the technique of choice of the organ extraction was the regulated laparotomy and aortic cannulation. The actual warm ischemia time should not exceed 60 minutes to accept the kidneys. The number of donors is 22 and the number of recipients is 29. The following variables are analyzed: age, sex, type of renal disease, time and type of dialysis, previous transplants, graft

characteristics, complications and type and renal function.

Results: Receivers: average age is 64 years (36-76), 75.9% male and 24.1% female, average time on dialysis is 28 months, predominating hemodialysis as a substitute technique. This graft type represents 19% of those implanted per year. Functional delay was observed in 48.3% of cases, requiring hemodialysis in some cases. The renal biopsy was necessary in 41.4% of the patients; in 25% of these an acute rejection was detected. Glomerular filtration at the first month in 75.9% of cases was between 59-15 ml / min / 1.73m2. Donors: average age is 66.5 years (24-74), average total hot ischemia is 22 minutes (11-37) and functional hot ischemia is12 minutes (7-27).

Conclusion: In the short term, the results with this type of donors are similar to those of donation in brain death.

UP.456

Ureteral Stenosis following Renal Transplantation: 13 Years' Experience of a Reference Centre

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Introduction and Objective: Renal transplantation (RT) is the definitive treatment for end-stage renal disease. Ureteral stenosis (US) is one of its most common urologic complications and has been reported in 2.6-15% of patients. We aim to describe our experience in the management of post-RT US.

Materials and Methods: Retrospective review of clinical data from 1218 consecutive RT patients, operated between January 2004 and December 2016, with evaluation of US management options and respective recurrence rates (RR).

Results: Uretero-vesical (UV) anastomosis was performed according to Paquin technique in every patient. The average follow-up time was 38,6±25,7 months. US was diagnosed in a total of 36 patients (2.96%). The median time from RT to US diagnosis was 3.5 (IQR 3-5) months. Most US (29) involved the distal ureter and/or UV junction (82.8 %), with only 3 (8.6%) cases affecting the middle ureter and 3 (8.6%) the uretero-pielic junction. Median US length was 2 (IQR 1.5-3) cm. Surgical management options and global and treatment-specific RR are presented in table 1. Primary surgical treatment RR was higher for the endoscopic interventions and was associated with longer mean RT operative time (121 vs. 101 min, p=0.022). The median global time from treatment to US recurrence was 2 (IQR 1-6.5) months. We report 2 cases of graft loss (5.6%) due to US. The time between RT and US diagnosis and the stenosis location and length were not associated with overall or treatment-specific RR (p>0.05).

Conclusion: US management should be chosen on a case-by-case basis, according to clinical features, treatment-specific RR and previous surgical options, balancing chance of success and invasiveness.

UP.457

Impact of Donor Nephrectomy on Living Related Kidney Donors Quality of Life. A Comparison between Male and Female Donors in a Developing Country

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Introduction and Objective: To assess the impact of donor nephrectomy on living kidney donors by comparing the health-related quality of life (HrQOL) scores measured by Short Form-36 (SF36) between male and female donors. Males and females have different psychological and physical challenges in life so these things were taken into account in the study.

Materials and Methods: One hundred and two live related donors were included in this study between years 2011 to 2015.Total of 102 participants 72 were female. And 30 males. Female had mean age 35 years and males 39 years. They were then contacted via emails and telephonic interviews to participate in a SF-36 HrQOL survey. Chart review, individual baseline, and postoperative renal function. The SF-36 scores were compared between males and females.

Results: After a median follow-up of 2 to 6 years, the Mean SF-36 scores of male and female were compared and were not significantly different between the two groups in terms of physical and emotional and social parameters based scores.(p value>0.05).However the physical disfigurement was felt more in young females.

Conclusion: Donor nephrectomy doesn't have significant negative effects on quality of lives of both females and males.

UP.452, Table 1.

	MDN (n=141)	LDN (n=110)
Donor		
Sex		
Male	92 (65%)	78 (70%)
Female	49 (35%)	32 (30%)
Age (SD)	44,39	47,67
Kidney		
Left	126 (90%)	93 (84%)
Right	14 (10%)	17 (15%)
Renal arteries >1	16 (13%)	20 (18%)
Renal veins >1	3 (2%)	2 (2%)
Preoperative sCr	0,76	0,73
Recipient		
Sex (%)		
Male	89 (63%)	72 (64%)
Female	52 (37%)	38 (36%)
Age	36	39
Pre-emptive	25 (18%)	27 (25%)

UP.458

Vitamin D Restriction of during the Perinatal and Postnatal Periods Alters Penile Morphology in Offspring of Wistar Rats

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Introduction and Objective: Vitamin D deficiency is prevalent all over the world and is associated with chronic diseases. Our work evaluates the effects of vitamin D restriction during perinatal and postnatal periods on the penile morphology of adult Wistar rats.

Materials and Methods: Six-week-old female Wistar rats were separated into two groups: SC (n = 8, standard control diet AIN93G) or VitD- (n = 9, restricted diet AIN93G in vit D) for six pre-gestational weeks until the end of lactation, when they were mated. The penises of the offspring were dissected and processed for analysis of the total area (A), corpus cavernous area (CC) with and without tunica albuginea (TA), TA, corpus spongiosum (CS), Dorsal artery (DA), lumen and tunica media of DA, nuclear density in the tunica media of AD, deep dorsal vein (DDV) area. We quantified in percentage the connective tissue, smooth muscle, sinusoidal spaces, elastic fibers, cell proliferation, vessels and nerves in CC, CS and dorsal region (DR). Data were expressed as mean and standard deviation, unpaired t-test and significant p <0.05.

Results: In VitD-: The areas A (-5.45%; p=0.0083), CC with TA (-7%, p=0.0007) and without TA (-5.7%, p=0.0133), TA (-8.55%; p=0.0001) decreased. The CS area increase (+9.50%; p<0.0001). The connective tissue increased in CC and CSE (+9.52%, p<0.0001; +16.23%, p<0.0001). Smooth muscle increased in CC (+25.19%, p<0.0001) and CS (+21.06%, p=0.0074). Sinusoidal spaces and elastic system fibers decreased in the CC (-21.54%, p=0.0002; -14.83%, p=0.0009). Decrease in the TA of CS (intracavernous stroma) by -11.86%; p=0.0004). Cell proliferation increased in CC (+17.39%, p= 0.0161). We observe an increase in the area of the tunica media of the dorsal artery (+45.81%; p=0.0156) with consequent decrease in its lumen (- 47.28%; p=0.0004).

Conclusion: Vitamin D restriction during the perinatal and postnatal periods impaired metabolic parameters in adulthood. In addition, it contributed to the development of penile morphological alteration in the offspring. These data may suggest that vitamin D deficiency might be associated with erectile dysfunction.

UP.459

Evaluation of Early and Late Effects of Chronic Stress in the Corpora Cavernosa of Prepubertal and Adult Rat Penis

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Introduction and Objective: The aim of this study was to evaluate the early and late effects of chronic stress in the corpus cavernosum of rat penis subjected to stress before and after puberty.

Materials and Methods: The animals were stressed by immobilization on rigid and opaque tubes for two hours a day, for six weeks. The stressed animals pre-pubertal (EC4I, n=10PPIE, n = 10) and adults (EC10I, n=8 AIE, n = 8) for immediate evaluation were analyzed 24 hours after the last stressor stimulus. The stressed animals prepubertal (EC4T, n=10 PPLE, n = 10) and adults (EC10T, n=9ALE, n = 9) for late evaluation were analyzed six weeks after the last stressor stimulus. Animals of the same age were used as controls. A fragment from the proximal- shaft of the penis has been fixed in 4% buffered formalin and processed for paraffin embedded. The analysis was done in 5µm thick sections and stained with Masson's trichrome. The sections were evaluated at an X24 magnification to evaluate the total area of the penis, the area of the corpora cavernosa with and without the tunica albuginea, and the thickness of the tunica albuginea. Also, the sections were evaluated at X200 magnification to evaluate the density of connective tissue, smooth muscle fibers and sinusoidal spaces.

Results: The total area of the penis increased by 6% in PPLE group whens compared to controls (p=0.03). The area of the corpora cavernosa with and without albuginea decreased by 12% (p=0.02) and by 16% (p=0.02), respectively, in AIE group when compared to controls. The thickness of the tunica albuginea increased by 14% in ALE group (p=0.01). The density of smooth muscle fibers decreased by 48% in AIE group (p<0.01) when compared to controls.

Conclusions: Chronic stress causes major structural changes in the rat penis, especially when subjected to stress in adulthood.

UP.460

Histomorphometrical Evaluation of the Corpus Cavernosum of Hypertensive Rats Treated with 5-Alpha-Reductase Inhibitors

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Introduction and Objectives: To study the penis of hypertensive rats after 5-alpha-reductase inhibitors treatment.

Materials and Methods: Sixty male rats were assigned into 6 groups as following: WKY –group composed by untreated Wistar Kyoto rats (normotensive strain); WKY+D - Wistar Kyoto rats treated with dutasteride (0.5 mg/Kg/day); WKY+F - Wistar Kyoto rats treated with finasteride (5 mg/Kg/day); H - group composed by the strain of spontaneously hypertensive rats (SHR); H+D - SHR treated with dutasteride; H+F - SHR treated with finasteride. All treatments were given by gavage during 40 days after what the animals were killed and their penis were collected and processed for histomorphometrical analysis. Sections stained with hematoxylin/eosin were used to study the cross-sectional penile area, while Masson's trichrome was used for study the surface density of smooth muscle fibers, connective tissue, and sinusoidal spaces of the corpus cavernosum. The results were compared by one-way-ANOVA with Bonferroni´s post-test, considering p>0.05.

Results: The cross-sectional penile area of normotensive animals that received dutasteride or finasteride was reduced by 39.9% and 40% in comparison to untreated normotensive animals. The connective tissue of SHR group was 13.7% higher than WKY, and SHR+D animals had an increase of 12.9% of connective tissue in comparison to untreated hypertensive animals. The sinusoidal space was reduced by 33.7% in SHR in comparison to WKY. In respect to the smooth muscle surface density, WKY+D showed a reduction of 26.1% in comparison to WKY, while both SHR+D and SHR+F showed reductions of 29.4 and 32.5% in comparison to untreated SHR.

Conclusions: Hypertension promoted important modifications on penile structure. Both 5-α-reductase inhibitors (dutasteride and finasteride) promoted modifications in penile morphology of normotensive and hypertensive rats, although these modifications were more prominent in hypertensive animals. Dutasteride was the drug that most affected the corpus cavernosum in this rodent model.

UP.462

Is Serum Uric Acid Level Correlated with Erectile Dysfunction in Coronary Artery Disease Patients?

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Introduction and Objective: Coronary artery disease (CAD) and vascular insufficiency are consequences of modern lifestyle, and vasogenic erectile dysfunction (ED) is one of the leading causes of sexual dysfunction which could be prevented like ischemic heart disease if the risk factors are discovered and managed.

Materials and Methods: Seventy-five men scheduled for coronary angiography were asked to fill out the IIEF5 questionnaire and underwent serum lipoprotein-a, uric acid, lipid profile, testosterone, Sex Hormone Binding Globulin (SHBG), dehyderoepiandrostendion sulfate (DHEAS) tests; and the results were compared with those of erectile dysfunction patients with and without coronary artery disease.

Results: Ten out of 32 CAD patients (30%) and 6 of 43 normal coronary men had ED Prevalence (P=0.04). The average serum uric acid in ED patients with normal coronary was 5.6 (± 0.68) 6.5 ±078 mg/dl in ED patients of CAD group P=0.034.

Conclusion: Men with both ED and CAD had significantly higher levels of lipoprotein-a compared to those CAD patients with normal sexual function. Higher uric acid and lipoprotein-a levels are correlated with the presence of ED in patients with CAD.

UP.463

Can Testosterone Level Be a Good Predictor of Late-Onset Hypogonadism?

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Introduction and Objective: Androgens are essential for the development and growth of the genitalia. They regulate the erectile physiology by multiple mechanisms. Several studies have examined associations among sex hormones' serum levels, erectile function and sex drive. We sought to identify a protocol for using testosterone in men with erectile dysfunction and late-onset hypogonadism (LOH).

Materials and Methods: During a 16-month period, men with erectile dysfunction who presented to the andrology clinic were selected. They underwent

UP.456, Table 1. US Surgical Management and RR

	n/N (%)	Treatment-specific RR n/N (%)	p-value	Global RR n/N (%)
Primary treatment				
Ureter stenting	6/35 (17.1%)	5/6 (83.3%)	0.040*	16/35 (45.7%)
Baloon dilation	17/35 (48.6%)	9/17 (52.9%)		
UV reimplantation	9/35 (25.7%)	2/9 (22.2%)		
Uretero-ureterostomy (UU) – native ureter	3/35 (8.6%)	0/3 (0%)		
Secondary treatment				
Ureter stenting	3/16 (18.8%)	2/3 (66.7%)	p=0.399	6/16 (37.5%)
Baloon dilation	1/16 (6.3%)	1/1 (100%)		
UV reimplantation	6/16 (37.5%)	2/6 (33.3%)		
UU – native ureter	5/16 (31.3%)	1/5 (20%)		
Uretero-pieloplasty	1/16 (6.3%)	0/1 (0%)		
Tertiary treatment				
Baloon dilation	1/5 (20%)	0/1 (0%)	-	0/5 (0%)
UV reimplantation	2/5 (40%)	0/2 (0%)		
UU – native ureter	2/5 (40%)	0/2 (0%)		

a complete physical examination and filled out the International Index of Erectile Function-5 questionnaire. Serum luteinising hormone (LH) and testosterone levels were evaluated. Patients received a single intramuscular injection of 250 mg testosterone. Thereafter, serum levels of LH and testosterone were measured 3 weeks later.

Results: The mean age was 53 years old. After treating patients with testosterone, 45 (94%) showed improvement in LOH symptoms including libido, loss of energy, irritability and quality of life. The mean International Index of Erectile Function was 9 and 13.1, prior to and after treatment respectively. Mean serum testosterone levels before and after treatment were 4.2 and 4.1 ng ml 1 respectively ($P = 0.849$). Mean serum LH revealed a significant decrease after the study ($P = 0.004$) (6.12 and 5.1 ng ml 1, before and after the study respectively).

Conclusion: Our findings suggested that testosterone replacement therapy improves libido and LOH symptoms in individuals with almost normal or lower limit normal value of serum testosterone levels.

UP.463

Correlation BMI with PSV Post Robot-Assisted Radical Prostatectomy

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Introduction and Objective: Erectile dysfunction(ED) is a significant cause of morbidity after radical prostatectomy. Even though after Robot-assisted radical prostatectomy (RARP) was introduced, this morbidity have been decreased but, it is not satisfied until now. Erectile dysfunction have been studied that it is correlated with metabolic syndrome and known as precursor of cardiovascular and peripheral vascular disease. We would like to analyze that the influence of BMI to penile duplex parameter after RARP.

Materials and Methods: Between 2010 and 2014, 52 patients who were underwent Penile color-duplex U/S post RARP were included. We analyzed the medical records retrospectively. All patients were injected Standro® and checked peak systolic velocity (PSV) by penile color-duplex U/S at post RARP 12months. We divided Patients into three groups depend on the BMI (A: < 25, B: 25~29.9, C: ≥ 30). The Linear Regression Analysis was used to compare the three groups of patients.

Results: Each groups (A, B, C) were consisted by 17, 18, 17patients. (Table 1) In group A, there was 58.9% of patients showed that PSV was higher than 10cm/sec and group C showed lowest PSV. There is statistically significant difference in PSV depending on BMI between three groups.

Conclusions: Patients who had high BMI significantly decreased PSV. So, BMI was the significant factor for affecting the erectile dysfunction after RARP.

UP.464

Vaginismus Management in Unconsummated Marriage Couples

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Introduction and Objective: Vaginismus is one of the most common psychosomatic disorders amongst the female partners precluding the intravaginal deposition of sperm. It was reported to be the reason for UCM in 20% to 67% of cases and leads to dyspareunia, infertility and sexual dysfunction in either partner. The aim of this study was to evaluate the response of these women and their husbands to an individualized, psychotherapeutic assessment and treatment.

Materials and Methods: The study involved a retrospective sequential cohort of 60 couples with UCM due to the woman's Vaginismus. They were evaluated by a female gynecologis and sexologist in out patient clinics. They were followed up to assess their response to an individualized, structured treatment protocol. The treatment combined sex education with systematic desensitization, targeting fear and anxiety as sociated with vaginal penetration.

Results: A total of 93.3% of the studied group had a successful outcome after an average of 4 sessions. Penetrative intercourse was reported by the tolerance of these women; further pregnancy was achieved in 76.6 % of the infertile couples.

Conclusion: Insufficient knowledge of sexual intercourse is a major contributor to the development of Vaginismus in the sampled population. It appears that they respond well to an individualized, structured treatment protocol as described by Hawten 1985 (regardless of other risk factors associated with vaginismus).The best treatment is prevention based on sexual education of youngsters and treatment of sexual dysfunctions for people who consult before marriage.

UP.465

A Prospective Analysis of Low Intensity Shock Wave Therapy for Erectile Dysfunction

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Introduction and Objective: Low Intensity Shock Wave Therapy (LISWT) aims to restore natural or spontaneous erectile ability by tackling the underlying pathophysiology behind erectile dysfunction (ED). This research Project assesses the feasibility of LISWT as a new modality of treatment for Erectile Dysfunction.

Materials and Methods: This project had the approval of the University of Malaya Medical Ethics Committee (MECID.NO: 201632240) (NMRR.ID: NMRR168483112). A total of 15 patients with ED of vasculogenic etiology based on risk factors and who have completed families were recruited prospectively. A PDE5-inhibitor washout period of 1 week was observed in all patients. All participants answered the IIEF-15 questionnaire and underwent a penile Doppler ultrasound (PSV of cavernosalartery was recorded in flaccid state) pre- and post- LISWT treatment. LISWT was delivered using ELvation®PiezoWave 2machine to the ventral, dorsal aspect of penis and perinealregion. A regime of 2000 shocks per site, at 14Hz per shock was delivered. Participants were subjected to 6 sessions in total i.e 2 sessions per week for 3 weeks.

Results: From the 15 patients enlisted, there was 1 dropout due to an unrelated medical condition. Fourteen patients completed treatment and successfully completed the IIEF-15 scoring. Four patients did not undergo the post procedural US Doppler, hence leaving 10 patients for full data analysis. Fifty percent (7/14) of participants showed a 2 to 10 points improvement in the Erectile Function Domain of the IIEF-15. Forty two percent (6/14) of participants showed 1 to 6 points improvement in Orgasmic Function Domain of the IIEF-15. 90% (9/10) of participants showed improvement in Cavernosal Artery PSV recorded in the Penile Doppler Ultrasonography in the range of 2.0 to 14.0 cm/s.

Conclusion: LISWT is a promising modality for the treatment of Erectile Dysfunction of vasculogenic etiology. It is feasible to perform the penile Doppler ultrasonography on a flaccid penis. A larger study with the inclusion of a control group is needed to further assess this relatively new treatment modality.

UP.466

Diagnostic, Therapeutic and Prognostic Particularities of Male Pseudohermaphoroditism (Based on a Retrospective Study of 4 Cases of Feminizing Testics)

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Introduction and Objective: Leydig cell agenesis is a rare cause of male pseudohermaphroditism. It is characterized by inadequate virilization of male patients. The objective of this study is to specify the clinical and biological characteristics of this disease.

Materials and Methods: This is a retrospective study of 4 cases of male pseudohermaphroditism collected during 26 years of practice in the Habib Bourguiba Hospital urology department in Sfax.

Results: The average age of discovery was 14 years (10-17 years). Our four patients had a female phenotype but the consultation was motivated by the lack of appearance of secondary sexual characteristics. The clinical study had shown the absence of breast development in 4 cases, clitoral hypertrophy with emergence of a glans in one case. Ultrasound showed intra-abdominal testis in all 4 cases. The hormonal balance revealed an increase in LH (3 cases), FSH (2 cases) rates and a collapse of testosterone levels in all 4 cases. All patients had a karyotype 46 XY. A bilateral

inguinal orchidectomy was performed in all patients. Histological examination concluded to a feminizing testis with a genesis of Leydig cells in all 4 cases, associated with a bilateral in situ seminoma in one case.

Conclusion: Leydig cell agenesis is a very rare condition which the treatment is summarized in cryptorchid gonad excision surgery. Diagnosis should be as early as possible to avoid any mistaken sex determination in which the child will be raised, with sometimes serious psychological and somatic consequences.

UP.467

Sexual Behavior in Patients with Genital Condylomas

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Introduction and Objective: Genital condylomas are benign viral skin tumors or mucous membranes due to human papillomaviruses. Few authors study the psycho-affective and sexual repercussions of this condition.

Materials and Methods: Through a prospective study of 26 patients, over a period of three months, we tried to illustrate the affective, psychological and sexual disorders in men as well as in women suffering from venereal condylomas.

Results: Our 26 patients are divided into 14 men and 12 women. The majority of our patients were young with an average age of 35 years. Three men were unmarried, three divorced women, and four couples with both partners affected and 12 patients (7 men and 5 women) in whom the partner could not be examined. Our patients belong to various socio-professional categories. Fifteen patients had a history of genital infections. Seven men presented acute urethritis presumed to be gonococci. Eight women had recurrent genital candida, 4 of which were associated with trichomonas and 1 with gonococcus and chlamydia. All women denied having sex before marriage, while 13 of the 14 men had multiple partners, two of whom had homo and heterosexual relationships. The complaint was mostly non-sexual, only 5 of our patients presented a sexual reason for consultation. Affective reactions were present in two-thirds of our patients and mental disorders in three-quarters of them while the announcement of the sexual transmissibility of the disease. Anxiety has been found in half of the cases. 11 patients had the sexual disorders often associated or generated by psycho-affective disorders.

Conclusion: Genital candylomas are a source of embarrassment, shame and mistrust. Prevention is crucial and requires a sex education program.

UP.468

Sexuality Profile in Couple in Pregnancy from a Medical Assistance Procedure

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Introduction and Objective: Medically assisted procreation (MAP) has changed the lives of millions of couples. However, it is only successful in one third of the cases. Our objective was to analyze the opinions of Tunisian women about the impact of sexuality on the pregnancy and to profile their sex life during pregnancy from MAP.

Materials and Methods: A prospective study was conducted on the sexuality of 40 couples during a pregnancy from a MAP carried out at the Sfax maternity center during nine months.

Results: The average age was 29 years. That of the partners was 36 years. The average duration of infertility was 4 years and 3 months. It was primary in 82% of cases. It was of male origin in 24 cases, feminine in 9 cases and mixed in 6 cases. The average gestational age was 22 SA. The opinions of the respondents were as follows: 90% of pregnant women say that it is possible to have sex during pregnancy, 52.2% believe sex had no impact on the child to be born and 70% of the partners said that the pregnancy changes the relationship within the couple rather positively. Concerning sexuality during pregnancy: 65% of the patients had sexual activity, sexual intercourse was less satisfactory in 80% of the cases. Dyspareunia was noted in 27.5% of the cases, 80% of the patients resumed sex 40 days after childbirth.

Conclusion: The sexuality of these couples was suffering in 80% of the cases. This will require that health professionals open a dialogue on sexuality during pregnancy subject.

UP.469

Significance of Erection Hardness Score as a Diagnostic Tool to Assess Erectile Function Recovery in Japanese Men after Robot-Assisted Radical Prostatectomy

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Introduction and Objectives: The objective of this study was to characterize time-dependent recovery of erectile function in Japanese patients following robot-assisted radical prostatectomy (RARP) using the erection hardness score (EHS).

Materials and Methods: This study prospectively included 170 Japanese patients with localized prostate cancer (PC) undergoing RARP without neoadjuvant hormonal therapy. The erectile function of each patient was assessed based on the International Index of Erectile Function-5 (IIEF-5) and EHS at the baseline and on every visit to an outpatient clinic after RARP. In this series, potency was defined as the ability to have an erection sufficient for intercourse, corresponding to EHS ≥3, while patients with EHS ≥2 were regarded as those with erectile function.

Results: Of these 170 patients, 20 and 75 underwent bilateral and unilateral nerve-sparing procedures, respectively; however, non-nerve-sparing procedures were performed in the remaining 75. A proportional increase in the IIEF-5 score according to EHS was noted at 24 months after RARP. At 6, 12 and 24 months after RARP, the recovery rates of erectile function were 11.9, 21.7 and 35.8 %, respectively, while those of potency were 3.8, 9.8 and 13.7 %, respectively. Of several factors examined, the age, preoperative IIEF-5 score and nerve-sparing procedure were identified as independent predictors of erectile function recovery.

Conclusion: These findings suggest that favorable erectile function recovery could not be achieved in Japanese PC patients even after the introduction of RARP; therefore, it might be preferable for such a cohort to use EHS rather than IIEF-5 as an assessment tool for the postoperative recovery of erectile function.

UP.470

Relationship between Vitamin D Levels and Recurrent Renal Calcium Lithiasis: A Case Control Study

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Introduction and Objectives: The incidence of renal stone disease is on a rise throughout the world and multiple factors contributing to stone formation include environmental, genetic, nutritional, anatomic and metabolic factors. Recently a consistent relationship has been reported in several studies between vitamin D and calcium renal stones, some studies reporting higher while others highlighting lower vitamin D levels causing renal calcium lithiasis. We conducted this study with aim to analyze the exact relationship between vitamin D, hypercalciuria and renal calculi.

Materials and Methods: A case control study was conducted in a high volume tertiary care teaching institute on 98 patients, divided into two groups: Group A/ cases: 55 calcium stone forming patients, and Group B/controls: 44 non stone formers. Various metabolic factors were studied in blood (total and ionic calcium, phosphorous, uric acid, alkaline phosphatase and vitamin D) and urine (calcium, sodium, potassium, uric acid, phosphate). The percentage of vitamin D deficiency and insufficiency along with hypercalciuria between two groups were analyzed and compared. The SPSS 16.0 statistics program was used for the analysis, with a $p \leq .05$ being considered significant.

Results: The mean age of Group A and Group B was similar and gender ratio (male: female) in stone

UP.463, Table 1.

	A(%)	B(%)	C(%)	P
PSV ≤ 5cm/s	2(11.7)	6(33.3)	9(52.9)	<0.05
5cm/s < PSV ≤10cm/s	5(29.4)	7(38.8)	5(29.4)	0.62
10cm/s < PSV ≤ 30cm/s	10(58.9)	5(27.7)	3(17.6)	<0.05
	17	18	17	

formers was 3:1. Majority of stone formers were smokers. Serum calcium was within the normal range (8.5-10.5mg/dl) in both groups although higher in stone formers and the difference was statistically significant (P=0.027). Idiopathic hypercalciuria (urinary calcium >200mg/day) was the most common metabolic abnormality reported in stone formers (43.6%) and vitamin D deficiency (<20ng/ml) were reported 83% calcium stone patients. Also, vitamin D levels showed a positive correlation with serum alkaline phospahatse (bone formation marker), indicating the defect in bone formation resulting in hypercalciuria and calcium stone formation.

Conclusion: Renal calcium stone-forming patients have lower mean levels of vitamin D and a higher percentage of hypovitaminosis D than in non-stone-forming patients. These findings hint towards less of bone formation compared to destruction in the pathogenesis of renal calcium lithiasis and could prove to be the first step towards formulation of preventive practices in such cases.

UP.471

Changes in the Composition of Staghorn Calculi over the Last Four Decades

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Introduction and Objective: Staghorn calculi (SHC) have been traditionally a synonymous of infection stones. However, recent evidence has demonstrated an increased incidence of SHC of non-infectious origin. Our study aims to determine how the composition of SHC, as well as their epidemiological characteristics, have evolved over the last thirty-six years in our health area.

Materials and Methods: A retrospective study of all of the documented composition studies of kidney stones in the North health area of Granada from January 1980 to June 2016 was conducted. We selected only those studies in which presence of SHC was recorded in the medical history. Chemical composition of the stones, sex and age of the patients at the time of diagnosis were studied. We divided these data into 4 periods (1980-1989, 1990-1999, 2000-2009 and 2010-2016) for their analyis.

Results: Up to 2901 stone studies were reviewed. We selected 170 of them (5.9%) with a staghorn morphology recorded. Mean age of the patients was 51.7 years, 55.1 vs 49.2 for men and women respectively (p=0.074). In general, 40.6% vs 58.8% of SHC had an infectious vs non-infectious origin, respectively. SHC were more frequent in females (62.7%). 73.9% of the infectious litiasis were diagnosed in women vs 55% of those with a metabolic origin 55% (p = 0.012). We found a reduction in the proportion of infectious staghorn calculi between the 80s and the last 6 years (p<0.001): 62.2% of the lithiases diagnosed between 1980 and 1990 were infectious and 37.8% metabolic, but in the last six years this ratio has changed to 28.8% and 71.2% respectively.

Conclusions: We hipothesize that the widespread use of antibiotics and the increasing prevalence of obesity and metabolic syndrome are changing the composition of SHC in our population, as other studies have shown. However, infectious SHC remain to be more frequent in women in their fifties.

UP.472

An Update of Paediatric Urinary Stone Composition in the United Kingdom & Ireland

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Introduction and Objective: Urolithiasis is a recurrent condition with up to 50% of patients experiencing repeated episodes within 10 years. Performing stone analysis for the comprehensive evaluation of children with urinary tract calculi can go a long way to reducing morbidity and recurrence.

Materials and Methods: We retrospectively reviewed stone specimens from paediatric patients submitted to the chemical pathology department of a tertiary UK teaching hospital between 2010 and 2015. Samples were received from England, Scotland, and the Republic of Ireland. All specimens were analysed using infrared spectroscopy.

Results: A total of 220 samples were reviewed -143 boys and 77 girls; median age of 9 years (0-17 years). Most specimens came from Yorkshire (49.5%), East Midlands (21.8%), and the Republic of Ireland (18.2%). The most prevalent stone components in males compared to females were calcium phosphate (37.1% cf 41.6%), calcium oxalate (31.5% cf 35.5%), struvite (11.2% cf 14.3%) and cystine (10.5% cf 1.3%, p=0.01), respectively. Cystine was the only crystal to demonstrate statistical significance between the sexes.

Conclusion: This is the largest paediatric stone analysis database in Europe. Calcium oxalate crystals appears to be the most prevalent in this age group in much of the published literature worldwide. Interestingly, the most prevalent crystal in this analysis was calcium phosphate. It is unclear if this is due to consumed local water content or variations in dietary and lifestyle factors. This study provides valuable contemporary insight into the composition of urinary tract calculi in our paediatric population and can help to address risk factors accordingly.

UP.473

A Contemporary Analysis of Adult Urinary Stone Composition in the United Kingdom & Ireland

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Introduction and Objective: It is well known that urolithiasis is a recurrent condition with up to 50% of patients experiencing repeated episodes within 10 years. International guidelines suggest performing stone analysis for the comprehensive evaluation of patients with urinary tract calculi and it plays a very important role in the long-term management of this condition.

Materials and Methods: We retrospectively reviewed stone specimens from adult patients submitted to the chemical pathology department at a tertiary UK teaching hospital between 2010 and 2015. Samples were received from England, Scotland, Wales, Northern Ireland and the Republic of Ireland. All specimens were analysed using infrared spectroscopy.

Results: A total of 5,533 samples were reviewed consisting of 3,873 male and 1,660 female patients with a median age of 56 years (18-97 years). Specimens were received from the East Midlands (43.3%), Yorkshire (35.4%) and Scotland (8.5%). The most prevalent stone compositions for males compared to females were calcium oxalate (68.3% cf 47.5%, p<0.01), calcium phosphate (15.5% cf 30.6%, p<0.01), urate (10.6% cf 8.2%, p<0.01) and struvite (2.5% cf 8.5%, p<0.01), respectively.

Conclusion: Our findings from what is currently one of the largest adult stone analysis databases in Europe confirm calcium oxalate as the most prevalent major stone component in our study, which is comparable with similar published studies, and significant differences between sexes were observed across all the common stone compositions. This study provides valuable contemporary insight into the most common major composition of urinary tract calculi in our local population and can help to address risk factors accordingly.

UP.474

Efficacy of Tamsulosin on the Spontaneous Passage of Stone >8mm Locate in the Proximal Ureter above the Level of L3 Transverse Process: A Single Institution Randomised Controlled Study

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Introduction and Objective: Urinary stone disease is one of the most common reasons for patients visiting a urology practice, affecting about 5% to 10% of the population. Stone size and location are important predictors of stone passage. Using a selective α-adrenoceptor blocker for medical expulsive therapy (MET) is an effective treatment approach widely used for ureteral stones. Various studies has proven that the MET is effective in the management of distal ureteric stone. The objective of this study is to assess the efficacy of an alpha-1 adrenergic receptor blocking agent (tamsulosin) on the spontaneous passage of stone (>8mm) locate in the proximal ureter (above the level of L3 transverse process).

Materials and Methods: We evaluated 500 patient diagnosed with acute ureteric colic in the emergency room and in the urology outpatient from January 2013 to December 2015.All of them underwent ultrasound or CT scan as the primary imaging modality. Patients having single radio-opaque proximal ureteral stone >8mm above the level of L3 transverse was only included for the study and were randomized into two groups. Group 1 patients (n = 250) were followed with classical conservative approach and patients in Group 2 (n = 250) additionally received tamsulosin, 0.4 mg/

day during 4 weeks follow-up. The stone passage rates, stone expulsion time, change in colic episodes, and hospital re-admission were compared.

Results: Out of 500 patients, there were 350 males (70%) and 150 females (30%). Age range was 23-55 years. The two groups were well balanced in terms of baseline patient and stone characteristics. Average stone size was (range 8-1.2 mm) The Stone expulsion rates didn't showed any significant difference between tamsulosin receivers and non-receivers (35% vs 33%). But the time to stone expulsion period was shortened in those receiving tamsulosin (8.4 +/- 3.3 vs 11.6 +/- 4.1 days). Likewise renal colic episodes during follow-up period were significantly diminished in Group 2 patients (66% vs 36%) and hospitalisation (25% vs 33%).

Conclusions: Studies have shown that tamsulosin is a safe and effective drug that enhances spontaneous passage of ureteric stones. But our study tamsulosin was not much effective for stone (>8mm) locate in the proximal ureter (above the level of L3 transverse process).though it was effective in controlling the colic pain and shortening the time period for stone expulsion. Our study suggested that patient with stone size >8mm above the level of L3 transverse process if not responded to tamsulsoin after 5 days, then should go for the definitive treatment. Larger prospective trials are needed to make a definite clinical recommendation.

UP.475

Recurrence Time Predicts Change of Stone Composition in Recurrent Urolithiasis

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Introduction and Objective: Change of stone composition in recurrent urolithiasis is observed in clinical practice. However, determining factors of composition change remain unknown. Our aim was to investigate determinants of composition change in patients of recurrent urolithiasis.

Materials and Methods: A retrospective cohort study was conducted in Chinese patients who suffered from recurrent urolithiasis and received stone analysis from 2002 to 2015 in a tertiary hospital in Shanghai. Stone composition was measured by infrared spectrophotometry. The predictive variables included stone type, recurrence time and recurrence frequency. Stone type was defined according to dominant components of stones. Recurrence time was calculated according to time at diagnoses of initial and recurrent events. The outcome variable was composition change, which was defined as change of dominant components of stones. Potential confounders including age, gender and stone location were included in multivariate logistic regression analysis.

Results: Eighty-nine patients, including 65 male and 24 female, were eligible for inclusion in the final analysis. The median age of an initial event was 51 (21~89) years, and stones were located in the upper urinary tract in 80.9% (72/89) patients. Among all patients, 72 had two events, 14 had three events and 3 had more than three events. The median recurrence time was 27.9 (1.4~138.0) months. Stone composition changed in 31.5% (28/89) recurrent patients. Univariate analysis showed the risk ratio of composition change in the patients with a recurrence time of 1-5 years was 0.372 (95%CI, 0.143~0.971; P<0.05) when compared to the others. Multivariate analysis showed the adjusted odds ratio of recurrence time of 1-5 years was 0.258 (95%CI, 0.085~0.779; P<0.05). Stone type and recurrence frequency were not the determinants of composition change.

Conclusion: Stone composition changes in almost one third patients of recurrent urolithiasis. Recurrence time is an independent risk factor to predict composition change. Repeated stone analysis should be suggested to patients who suffer from recurrence in less than 1 year or more than 5 years.

UP.476

The Effect of Aged Vinegar on Stone Risk Factors in 24-Hour Urine: A Pilot Randomized Controlled Trial

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Introduction and Objective: The aim of this study was to investigate the effect of Aged Vinegar on stone risk factors in 24-hour urine.

Materials and Methods: We recruited young male healthy volunteers (aged 18-35 years) to detect the change of 24-hour urine risk factors associated with urinary stone pre- and after consuming Aged Vinegar. The exclusion criteria included: had urinary stone, serum creatinine >133μmol/L, hematuria, urinary tract infection and urinary diversion. Participants were assigned to Aged Vinegar group or control group by a simple random sampling technique. Participants in Aged Vinegar group drank 15ml vinegar (Ninghuafu, Sanxi, China) at noon and evening respectively for a period of four weeks, while control group drank 15 ml distilled water. All participants drank vinegar or distilled water under the surveillance of research clinicians. Participants, research clinicians, and trail personnel were not masked to trail assignment. The primary outcome was to compare the Ph value, volume, creatinine, oxalate, citrate, phosphate, uric acid, calcium, magnesium, potassium, sodium, chloride, the saturability of calcium oxalate and calcium phosphate in 24-hour urine between Aged Vinegar group and control group. These 24-hour urine samples were collected before trail, and on the 7th, 14th, 21th, and 28th day after trail beginning. This trial has registered on the Clinical Trials.gov (NCT02649140).

Results: Between Dec 14, 2015, and Mar 28, 2016, we recruited 53 volunteers, and randomly assigned 50 participants (three were excluded because of ineligibility), including 26 in Aged Vinegar group and 24 in control group. All participants were included in the primary analysis. The analysis of 24-hour urine showed that Aged Vinegar consumption could increase urine volume (P=0.020), decrease the secretion of calcium (P=0.037), and the saturability of calcium phosphate (P=0.026). The differences of Ph value (P=0.233), creatinine (P=0.072), chloride (P=0.372), potassium (P=0.494), sodium (P=0.374), phosphate (P=0.547), magnesium (P=0.432), uric acid (P=0.081), oxalate (P=0.079), citrate (P=0.549), and the saturability of calcium oxalate (P=0.591) were not statistical significant between these two groups.

Conclusion: Aged Vinegar could increase urine volume, decrease calcium secretion, and the saturability of calcium phosphate in 24-hour urine.

UP.477

Prevalence of Pediatric Urolithiasis in Kashgar Area of Xinjiang Province in China: An Ultrasonography Based Cross-Sectional Study

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Introduction and Objective: The aim of this study was to investigate the prevalence and associated factors of pediatric urolithiasis in Kashgar area of Xinjiang Province in China.

Materials and Methods: A cross-sectional survey was conducted among children (0-14years) in Kashi area from July to December 2016. Children were selected by a two-stage random clustered sampling method. Participants underwent urinary tract ultrasonographic examinations, provided blood and urine samples to analyze. Their parents or guardians were asked to fill out questionnaires. Children those who were found with any abnormalities of their urinary tract by ulrtasonography would undergo a low-dose computed tomography (CT) to confirm the abnormalities. Prevalence was defined as the proportion of children with urinary stone and binary logistic regression was used to estimate the associated factors. This study has registered on the Clinical Trials.gov (NCT03003312).

Results: A total of 5605 children (52.2% boy) with an average age of 77.4±63.6 (1-177) months were selected and invited to participate in the study. And 4849 (51.3% boy) children completed the investigation, with a response rate of 86.5%. The overall prevalence of urinary stone was 1.8% (95% confidence interval (CI):1.5, 2.2). The prevalence of urinary stone was significant higher among children who had a family history of urolithiasis (6.8% vs 1.6%, P<0.001), but it was similar between boys and girls(1.8% vs 1.9%, P=0.721) , between rural areas and urban areas(1.8% vs 1.9%, P=0.784), and it was decreased with age (P<0.001). Binary logistic regression analysis showed that without breast feeding, urinary tract infection, had a family history of urinary stone, and excessive sweating were all statistical significantly associated with increased risk of urinary stone.

Conclusions: Urinary stone is a common disease among children in Kashgar area of China and some feeding practice was associated with increased risks of stone formation.

UP.478

Risk Factors for Recurrent Febrile Urinary Tract Infection in Urinary Stone Patients with Acute Obstructive

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Introduction and Objective: To identify and evaluate the risk factors among former urinary stone patients with acute obstructive pyelonephritis of recurrent urinary tract infection (UTI).

Materials and Methods: We retrospectively reviewed the medical records of 72 patients. Following their initial treatment, patients who were subsequently admitted of their initial treatment were included.

Results: The mean age of patients was 67.3 years, and the mean follow-up duration was 31.4 months. After treatment, 33 patients showed recurrent UTI. Patients were divided into two groups: a recurrent UTI group (n=33)/a non-recurrent UTI group (n=39). In univariate analysis, significant differences were diabetes history, remnant stone after treatment and initially positive urine culture. In multivariate analysis, having an initially positive urine culture (p=0.002) was identified as being an independent risk factor for developing recurrent UTI. Of the recurrent UTI group, 20 (60.6%) patients showed positive urine cultures which were newly diagnosed as being positive or were different from those found in the initial urine culture. In multivariate analysis, an initial laboratory test finding of diabetes mellitus (DM) (p=0.024) and the presence of a unresolved stone (p=0.03) were significant factors associated with a newly diagnosed positive urine culture.

Conclusion: Initial positive urine culture was a significant risk factor for the development of recurrent UTI in urinary stone patients with obstructive uropathy. Additionally, continuous follow-up for urininalysis is also important to patients with DM or remnant stone.

UP.479

Eleven Years Cumulative Incidence and Estimation Lifetime Prevalence of Urolothiasis in Korea

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Introduction and Objective: To estimate the cumulative incidence and lifetime prevalence of urolithiasis in Korea.

Materials and Methods: We used a National Health Insurance Service (NHIS) sample cohort dataset that included approximately 1 million individuals from Korea. Data from January 1, 2002, to December 31, 2013, were collected. Using the NHIS dataset, we calculated the annual prevalence, recurrence rate, and estimate lifetime prevalence of urolithiasis. Multivariate logistic regression analysis was used to identify risk factors associated with urolithiasis.

Results: There were 57,921 diagnosed urolithiasis cases in National Health Insurance Service-National Sample Cohort data for 11years. The annual incidence of urolithiasis is increasing every year (Poisson regression; 1.025; p<0.001). Of the patients with stones, 21.3% had disease recurrence within 5years. The 11 years cumulative incidence was 5.71%, and the incidence was higher in the men than in the women (7.07% vs 4.34%). The 11 years cumulative incidence in the 60- to 69-year-old group was higher than that in any other age group (9.08%). Calibrated after adjustment for life expectancy, the overall standardised lifetime prevalence rate was estimated to be 11.5 %, 12.9% in men and 9.8% in women. Meanwhile, age (>60 years), income level, diabetes, body mass index, hypertension, and cancer history were identified as contributing factors to urolithiasis.

Conclusion: In this study, the annual incidence of urolithiasis in Korea is increasing. The overall standardised lifetime prevalence rate was higher than that in the previous report. This study is significant in that it is the first retrospective cohort study to estimate the lifetime prevalence of urolithiasis by using a large retrospective cohort at a national level.

UP.480

Implementation and Development of a Quality Management System in an External Shock Wave Lithotripsy Unit

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Introduction and Objectives: The aim of this study is to evaluate the implementation of a quality management system (QMS) determined by the International Organization for Standardization (ISO 9004:2008) in our extracorporeal shock wave lithotripsy (ESWL) daily practice.

Materials and Methods: We used a third generation electromagnetic shock wave lithotripter, Gemini® (Dornier MedTech, Wessling, Germany). ESWL is considered in our institution as an outpatient procedure and is performed under analgosedation. We determined three mayor clinical quality indicators, defined as follows: 1) Ultrasound located and tracked ESWL procedures in the kidney >80%; 2) Stone free rate (SFR), defined as absence of fragments or fragments ≤ 5mm in KUB and ultrasound after three months >75%; and 3) Required number of sessions to achieve SFR <1.5. Patients and external urologist, who referred patients to our unit, where anonymously surveyed to know about their satisfaction with the whole procedure. We retrospectively analyzed data from 300 patients who underwent ESWL for renal and ureteric calculi, from June 2015 to December 2016. Outcomes were assessed by KUB plain and renal ultrasound after three months. We analyzed stone location and tracked system, SFR and re-treatment rate to achieve SFR after three months, following our mayor clinical indicators defined above. We collected 285 surveys from treated patients and sheets with feed-back information from urologist who frequently referred patients to our unit.

Conclusions: The implementation and development of a QMS in an ESWL unit is feasible. We have fulfilled our self-imposed standards of quality during 2015 and 2016 what has let us get the certification AENOR ISO 9001 in "the selection, preparation, therapeutic procedure and follow up of the patient treated with extracorporeal shock wave lithotripsy". Its development is an important tool that has allowed us to reduce variability in clinical practice, to know or clinical and satisfaction results and to obtain additional information to implant future improvements.

UP.480, Table 1. Results

CLINICAL	2015		2016	
US located and tracked ESWL, %	83		85	
SFR after three months, %	76		79	
Sessions to achieve SFR	1.3		1.2	
SATISFACTION	**2015**		**2016**	
Mean global patients	9.1		9.0	
External urologist, %	Fair	19	Fair	21
	Good	38	Good	41
	Very good	43	Very good	38

UP.481

The Use of Dual Energy CT in the Prediction of Stone Composition and Use of Dissolution Therapy in Suspected Uric Acid Stones

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Introduction and Objectives: Dual energy CT (DE-CT) is a new technology, which aids more reliable prediction of stone composition. This is key for patients with urate stones, in whom dissolution therapy (DT) is known to be effective. The aim of this study is to establish the effectiveness of DT to stones with a predicted urate composition on DE-CT and assess the use of DE-CT in identifying non-urate stones, expediting alternative treatment.

Materials and Methods: Retrospective review of all 26 patients who have undergone departmental DE-CT for investigation of stones since its introduction in 2014. Results looked at use of DT, predicted and stone compositions, success of DT, other interventions/follow-up and serum urate.

Results: Of the 18 patients who underwent DE-CT after commencing DT, 10/18 had predicted uric acid on CT, all of whom continued on DT. 3/10 were successful; the remaining 7 patients underwent surgical intervention (n=5) or surveillance (n=2). DT was discontinued in all 7 patients who had been started on DT prior to DE-CT, which later predicted non-urate stones. Of these, 4 underwent surgical intervention; 2 under follow up. There were 8 patients who had DE-CT prior to commencing DT; 4/8 predicted non-urate, none of whom were started on DT and went under follow up (n=1) or surgical intervention (n=3). Four out of eight predicted urate composition, of which 3 started DT (2 successful, one passed stone spontaneously) and one underwent successful ESWL.

Conclusion: DE-CT is a useful diagnostic tool in predicting urate composition to guide appropriate commencement of DT, or expedite alternative intervention, avoiding unnecessary DT in non-urate stones.

UP.482

Stone Heterogeneity Index Can Be a Positive Predictor for Urinary Stone Composition Using Single-Energy Noncontrast Computed Tomography

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Intoduction and Objectives: Recently, newly reported stone heterogeneity index (SHI) which a proxy of such variations, was defined as the standard deviation of a Hounsfield unit (HU) on NCCT, can be a novel predictor for ESWL outcomes in patients with ureteral stones. They suggested that SHI can be a useful clinical parameter for stone fragility and hardness which can affect the outcome of ESWL. Thus we investigated the correlation between NCCT parameters including SHI and MSD, and stone composition.

Materials and Methods: We retrospectively reviewed the medical records of 255 patients who underwent operations and procedures for urinary stone disease between December 2014 and October 2015. Among these patients, 214 patients with urinary calculi who were performed NCCT and stone composition analyses were eligible for our analyses. Maximal stone length (MSL), Hounsfield units (HU), and stone heterogeneity index (SHI) were determined on pretreatment NCCT. For subgroup analyses, patients were divided into three groups with calcium oxalate compounds, infection stones (carbonate apetite and struvite) and uric acid stones.

Results: The mean age of the patients was 55.01±15.453 years. The distribution of operations and procedures included 9 cases of ESWL, 2 cases of LAPP, 14 cases of LAPU, 36 cases of PCNL, 19 cases of RIRS, 114 cases of URSL, 12 cases of VESL and 9 cases of spontaneous passages. The MSD (454.68±177.80 HU) and SHI (115.82±96.31) of uric acid stones was lower than others (Table 1). Based on post hoc tests, MSD of uric acid stones were lower than others (vs. CaOx: P<0.001 vs. infection stones: P<0.001). SHI of uric acid stones were lower than others (vs. CaOx: P<0.001 vs. infection stones: P<0.001), however, there were no significant difference in mean stone density (P=0.139) and stone heterogeneity index (P=0.175) between CaOx and infection stones. Receiver Operator Characteristic (ROC) curve of uric acid stone according to MSD and SHI demonstrated SHI (cut-off value: 140.4 HU) was superior to MSD (cut-off value: 572.3 HU) to predict uric acid stones (P<0.001).

Conclusions: Our data indicate that SHI can predict uric acid stones and its cut-off values was 140.4 HU.

UP.483

Intra-Renal Pelvis Is Associated with Non-Dilatation of the Ipsilateral Mild to Moderately or Acutely Obstructed Ureter

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Introduction and Objective: Most urological association guidelines on the management of a patient presenting with acute flank pain recommend initial assessment using ultrasound (US) of kidneys, ureters and bladder (KUB). Findings suggestive of an obstructing ureteric calculus as a cause of flank pain include; pyelo-ureteral dilatation, direct visualisation of calculus in the ureter and the absence of urinary ejection from the ureteral orifice into the bladder. The aim of this study was to find out whether the presence of intra-renal pelvis is associated with non-dilatation of the ipsilateral mild to moderately or acutely obstructed ureter secondary to the presence of a significant calculus burden in such ureters.

Materials and Methods: Patients with acute flank pain and who subsequently required surgical treatment for their ureteric calculi were studied. A patient was classified as having a significant ureteric calculus, if the calculus was more than 6 mm in size and the patient required active surgical intervention treatment such as ureteroscopic removal or SWL. Absence of ureteric dilation was diagnosed, if the kidney showed no hyrocalicosis or hydronephrosis and the ureter appeared not dilated on US of KUB, IVU or CT of KUB. We studied the anatomy of the renal pelvis in such patients to find out whether the presence of intra-renal pelvis predisposed to the non-dilatation of the pyelo-ureter, even though such ureters contained significant stone burden.

Results: Thirty eight patients were found to have significant calculus in their ureters without any dilatation of the calyces or the ureters on radiological imaging. Their mean age was 38.6 years with 36 (94.7%) being males and 2 (5.3%) females. Thirty five (92.1%) and 3 (7.9%) patients had intra-renal pelvis and extra-renal pelvis respectively. The location of the calculus in the ureter was found in the upper third (4 patients, 10.5%), mid-third (1 patient, 2.6%) and lower third (33 patients, 86.8%).

Conclusion: There may be a significant calculus in the ureter without dilatation of the renal pelvis, calyces or the ureter if the renal pelvis is intra-renal as opposed to it being extra-renal in location. This may be another rationale to proceed to CT KUB as the radiological imaging of choice for patients presenting with acute flank pain and in whom urolithiasis is highly suspected.

UP.484

The Safety of Continuing Low-Dose Acetylsalyciclic Acid during Shockwave Lithotripsy

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Introduction and Objective: It is well known that urology procedures such as endoscopic stone treatment, TURP, TURBT can be safely performed without ceasing low-dose acetylsalyclic acid (ASA). However, there are still doubts whether it is deemed safe to perform shockwave lithotripsy (SWL), for the treatment of renal stones, without discontinuing low-dose ASA, with regards to the risks of hemorrhagic complications during or following the procedure.

Materials and Methods: From April 2014 until December 2016, in our department, a total of 198 patients underwent SWL. From these 198 patients, 10 had already been on low-dose ASA, which was not stopped. More specifically, in this group of patients that did not discontinue their anti-platelet medication, 20% had 1 session of SWL, 50% had 2 sessions and 30% underwent a total of 3 or more sessions.

Results: Clinically significant bleeding and severe complications such as renal hemorrhage and peri-renal hematomas, which would undoubtably require urgent measures such as blood transfusions, prolonged hospital stay, embolisation or even nephrectomy, were not noted on any occasion. With regards to the efficacy of SWL, 40% of the patients were stone free, in 30% there was significant reduction of the stone size, while 30% underwent URS following their SWL sessions.

Conclusion: Taking into consideration the recent rise of the number of patients on anti-platelet medication, SWL should be considered a safe treatment option for patients with low-dose ASA-intake, since the risks of hemorrhagic events are not higher than the SWL-induced bleeding risk in the general population.

UP.485

Hypocitraturia is Much More Important than Hypercalciuria

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Introduction and Objectives: For ages hypercalciuria has been known the dominant risk factor for stone recurrence in calcium containing stones. Aim of the present study was to evaluate the frequency of hypercalciuria and hypocitraturia in high-risk stone patients with special regard on recurrence rate and specific metaphylaxis.

Materials and Methods: From 2008 to 2013 104 high-risk stone patients were treated in our clinic. 72 of them underwent metabolic assessment. 70 patients fulfilled the criteria for our retrospective assessment (aged over 16yrs, calcium containing stones). Metabolic assessment included blood chemistry, blood gas analysis and a 24-hours urine collection. Urine analysis included calcium, citrate, oxalate, phosphate, magnesium and uric acid. In most patients specific metaphylaxis was recommended. Recurrence rate was observed during a follow-up period of at least 8 months.

Results: Twenty two of the patients had pure calciumoxalate stones, 6 had pure calciumphosphate stones and 42 presented with mixed calciumoxalate / calciumphosphate stones. In pure calciumoxalate stones 7 presented with hypercalciuria (> 7mmol/24hrs) and 13 with hypocitraturia (<2.5mmol/24hrs). In pure

UP.485, Figure 1. Risk Factors in Calcium Containing Stones

	hypercalciuria	hypocitraturia	total (n)
calcium-containing stones % (n)	37.1 (26)	61.4 (43)	70
calciumoxalate % (n)	31.8 (7)	59.1 (13)	22
calcium phosphate % (n)	16.6 (1)	66.7 (4)	6
mixed stones % (n)	42.9 (18)	61.9 (26)	42

calciumphosphate stones 71 presented with hypercalcuiria and 4 with hypocitraturia. In mixed calcium containing stones 18 presented with hypercalciuria and 26 with hypocitraturia. In all calcium containing stones hypocitraturia was observed in 43 patients, hypercalciuria in 26 patients respectively. Hypocitraturia and was statistically significant (p=0.0161) more common than hypercalciuria. Specific treatment was recommended with alkaline citrate and thiazide. In 12 patients receiving specific metaphylaxis stone recurrence was observed.

Conclusion: Ninety seven percent of our patients had calcium containing stones. Hypocitraturia was significantly more common in these patients than hypercalciuria. Treatment of hypocitraturia seems to be the important factor in prevention of stone recurrence.

UP.486

Metabolic Evaluation in Calculus Disease-A High Volume Single Center Experience

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Introduction and Objective: To do the comprehensive metabolic work-up including stone analysis of the patients presenting to MPUH, Nadiad and who are at risk for recurrent stone disease.

Materials and Methods: Comprehensive metabolic evaluation was done in selected patients of stone disease. We selected the patients for metabolic evaluation based on specific parameters (bilateral stones, with family history of stone disease, with recurrent stone disease, in pediatric age group). Evaluation entailed urine analysis, various blood biochemical tests and stone analysis. Two 24 hour urine collections were done for estimation of the urinary metabolites (Creatinine, Calcium, Inorganic phosphate, Uric acid, Oxalate, Citrate, and Magnesium).

Results: The average age at presentation was 39.40 ± 14.32 years with male predilection (2.64:1). The average stone size was 1.34 ± 0.55 cm having an average density 1159.65 ± 315.90 HU on CT scan. Recurrent episodes were seen in 1331 patients (71.67%). Majority were mixed stones (71%) predominantly calcium stone (84%). Gender based urine metabolite data analysis suggested that hypercalciuria was predominantly seen in males (p value < 0.001); and hyperoxaluria, hypocitraturia and hypomagnesuria were seen predominantly in females (p value <0.001 for each metabolite). Among patients with congenitally abnormal kidney (n=37) most common stones encountered were calcium oxalate stones and most common metabolic abnormality encountered was hyperoxaluria followed by hypercalciuria. Specific metabolic abnormalities were observed with each type of stone. (Table)

Conclusion: There was a significant gender based difference in terms of association with metabolic abnormalities. Mixed stones are more common than pure stones. Certain metabolic abnormalities show strong correlation with the predominant stone composition. Stone analysis alone can give us an idea about the probable metabolic defect and thus it may form guideline for simplified metabolic work-up. Stone analysis thus forms an integral part of metabolic evaluation.

UP.486, Table 1.

Stone Composition	Associated Metabolic Abnormality	Percentage	P Value
Calcium Oxalate Stones	Hypomagnesuria	80.2 %	<0.01
	Hyperoxaluria	87.5 %	<0.001
	Hypocitraturia	63.4 %	<0.05
Calcium Phosphate	Hypocitratturia	76%	<0.01
Uric Acid	Hyperuricemia	80 %	<0.01
	Urine Ph < 5.5	91%	<0.001
Struvite Stone	Hypocitraturia	84.2%	<0.05
	Hypomagnesuria	92%	<0.01

UP.487

Super-Mini Percutaneous Nephrolithotomy: A Cross-Sectional Study

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Introduction and Objective: Supermini-Percutaneous Nephrolithotomy (SMP) utilized an enhanced irrigation through 7-F nephroscope inserted to 10-14 F modified access sheath with a suction-evacuation function. This study compared the perioperative outcome of patients who underwent SMP in single low volume center versus a multicenter prospective non-randomised clinical trial.

Materials and Methods: Retrospective cross-sectional study was performed in Jose R. Reyes Memorial Medical Center, a tertiary government hospital in Manila, Philippines. The renal access technique was similar in both studies with nephrostomy tract dilatation carried out to 10-14 F. The lithotripsy was performed using pneumatic lithotripter. A nephrostomy tube or JJ stent was placed only if clinically indicated. The perioperative outcome variables were extracted, analyzed and compared to the multi-center study conducted by Zeng et al. 2016. Independent samples t-test was used to compare perioperative outcome of subjects by their demographic and clinical characteristics. One-sample t-test and one proportion z test were utilised to compare perioperative outcomes between the two studies. A p-value of <0.05 will be considered significant.

Results: A total of 23 patients (M=13; F=10) with mean age of 45.65 ± 11.13 SD (range: 27-68 years old) were enrolled in the study. The mean operative time (155.7 minutes vs 45.6 minutes) and hospital stay (3.04 days vs 2.1 days) was significantly longer in our institution. However, the mean post- operative hemoglobin drop (0.57 g/dl vs. 1.13 g/dl), tubeless rate (70% vs 94.3%) and complications rate (0 vs. 12.8% Clavien grade ≤II) was significantly lower as compared to the multicenter study. There were no significant difference between the 2 studies in terms of initial stone free rate.

Conclusons: SMP in our institution has a higher tube application rates, longer operative time and hospital stay but with lower hemoglobin drop and complication rates as compared to the multicenter study.

UP.488

How to Accelerate the Upper Urinary Stone Discharge after Extracorporeal Shockwave Lithotripsy (ESWL): A Prospective Multi-Center Randomized Controlled Trial about External Physical Vibration Lithecbole (EPVL)

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Introduction and Objective: To asset the efficacy and safety of EPVL plus ESWL compared with ESWL alone for the treatment of simple upper urinary stones (<15mm).

Materials and Methods: All patients with upper urinary stones (<15mm) were prospectively randomized into two groups. In treatment group, patients were assigned to immediate EPVL after ESWL while in control group ESWL alone was offered. All patients were reexamined at 1, 2 and 4 weeks after ESWL. Stone size, stone location, stone free rate (SFR) and complication rate were compared.

Results: Fifty six males and 20 females in treatment group were compared to 52 male and 25 females in control group (p=0.404). Median ages were 42.9±1.5 years in treatment group and 42.7±1.3 years in control group (p=0.943). Median stone size was 10.0±0.4mm (3 to 15mm) in treatment group and 10.4±0.4mm (4 to 15mm) in control group (p=0.622). The stone clearance rate in treatment and control group at 1 week after ESWL was 51.3%(39/76) and 45.4%(35/77) (p>0.05), at 2 week was 81.6%(62/76) and 64.9%(50/77) (p<0.05), and at 4 week was 90.8%(69/76) and 75.3%(58/77) (p<0.05), respectively.

Conclusions: EPVL is a noninvasive, effective and safe adjunctive treatment which increases and accelerates upper urinary stones discharge after ESWL treatment.

UP.489

A Modified Technique for Performing Transurethral Nephroscopy Lithotripsy of Bladder Stones with/without Plasma Kinetic Resection of the Prostate of Benign Prostatic Hyperplasia

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Introduction and Objective: To probe the effective treatment for patients with Begin Prostate Hyperplasia (BPH) along with bladder stones with Plasmakinetic Resection of Prostate combining with Transurethral Nephrolithotripsy by Pneumatic and Ultrasound Lithotripsy.

Materials and Methods: Twenty five cases of patients of BPH combined with bladder stones were chosen. Plasmakinetic Resection of Prostate Combining with Transurethral Nephrolithotripsy by Pneumatic and Ultrasound Lithotripsy was used to compare the maximal urinary flow rate (Qmax), residual urine and other index in those patients before and after operations.

Results: All operations in 25 cases were successful, without any complications. Three months after operations, Qmax, and residual urine were significantly improved in patients.

Conclusions: Simultaneous transurethral bladder calculi lithotripsy combined with PKRP is considered as the safe, effective and minimal invasive surgical method to cure BPH along with bladder stones, also obviously improving the symptoms of obstruction, efectively removing calculus and improving the quality of life.

UP.490

Role of Lasers in Urolithiasis Intervention as Reflected by the Publication Trend over the Last 2 Decades

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Introduction and Objective: Laser technology has increasingly been used for stone fragmentation with most lasers able to control the frequency, power and/or the pulse mode during fragmentation. We wanted to see whether this is reflected in the publication trend and did a comprehensive PubMed database search for the 'use of laser in kidney stone intervention' over the last 16-years.

Materials and Methods: All published papers on 'laser', 'holmium', stone', 'Urolithiasis', 'kidney stones', 'renal stones', 'ureteric stones', 'percutaneous nephrolithotomy', 'percutaneous stone surgery', 'PCNL' and 'PNL', 'ureteroscopy' and 'URS' were searched on PubMed over the last 16-years from 2000-2015. There were no language restrictions and all non-English language papers with published English abstracts were also included in our review. While review articles were included, case reports and those papers that did not have a published abstract were excluded from our analysis. Data was divided into two 8-year periods, period-1 (2000-2007) and period-2 (2008-2015).

Results: During the last 16-years, a total of 406 papers have been published on lasers for stone surgery, including 363 (89%) English language and 43 Non-English language articles. There seems to be a steep rise in the articles published since 2010 (p<0.001) (Figure 1). When comparing the two time periods, there were 124 papers published in period-1, which had more than doubled (increase of 126%) to 281 papers in period-2 (p<0.02). The number of English/Non-English language articles in period-1 and period-2 were 112/13 and 251/30 articles respectively, suggesting a rise of around 125% and 130% in the study period.

Conclusions: Published papers on laser for stone surgery has increased over the last 2-decades confirming it to be a preferred modality of stone fragmentation. This reflects not only an increase of flexible ureteroscopy but also a renewed interest in the minimally invasive percutaneous renal stone surgery both of which use laser as their mode of fragmentation.

UP.491

Role of Minimally Invasive (Micro and Ultra Mini) PCNL for Adult Urinary Stone Disease in the Modern Era: Evidence from a Systematic Review

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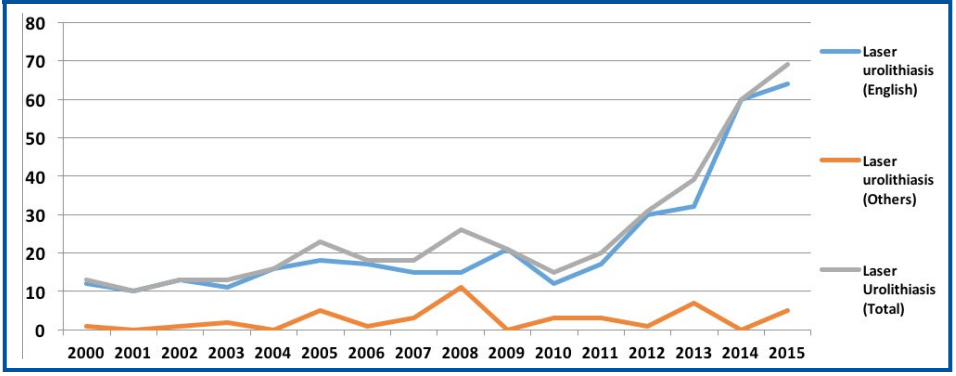
Introduction and Objective: In recent years, an increasing number of studies have been performed, reporting their experiences and results with miniaturised PCNL techniques (micro and ultra-mini). However, critical appraisal on these remains lacking. Therefore, we aimed to conduct a systematic review of the literature and evaluate the efficacy, safety and feasibility of micro and ultra-mini PCNL techniques.

Materials and Methods: A cochrane style search was undertaken to identify all original studies relating to micro and ultra-mini PCNL. Primary outcomes were stone free rate (SFR), complications and transfusion rates. Secondary outcomes included length of stay, operative time and stone size.

Results: In total, 10 studies (3 x micro, 7 x ultra mini) were identified which satisfied our pre-defined selection criteria. For micro PCNL (118 patients), the mean stone size was 13.9 mm and mean SFR was 89.3%. In 30.7% of cases, a JJ stent was placed intra-operatively. Mean operative time and length of stay was 87 minutes and 2.2 days respectively. Overall complicate rate was 15.2% [Clavien classification I (44%), II (28%), III (28%)], with no Clavien IV or V complications reported. All Clavien III complications were steinstrasse requiring emergency JJ stent insertion. While the mean drop in Hb was 10.2 g/L, the overall transfusion rate was 0.85%. For ultra-mini PCNL (262 patients), 44.5% had JJ stent placed. Mean operative time and hospital stay was 88.9 minutes and 1.8 days respectively. Overall complication rate was 6.2% [Clavien classification I (57%), II (36%), III (7%)], with no Clavien IV or V complications in any of these studies. While the mean drop in Hb across all studies was 10.5 g/L, none of them reported any blood transfusion.

Conclusion: While standard PCNL and ureteroscopy remain the benchmark surgical interventions for urinary stone disease, the potential role for miniaturised

UP.490, Figure 1.



PCNL techniques is emerging. This article has found that for small to medium sized renal stones it can yield good stone free rates whilst maintaining a low morbidity associated with it.

UP.492

Clinical Efficacy and Safety of Anterograde Ureterography for Radiolucent Ureteral Stone Localization in Extracoporeal Shock Wave Lithotripsy

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Introduction and Objective: Percutaneous nephrostomy (PCN) or JJ stent is needed in patients with urinary tract stones with infection or renal failure. When performing extracorporeal shock wave lithotripsy (ESWL), localization of the radiolucent ureteral stone is not easy. We report our experience that anterograde ureterography using a PCN for radiolucent ureteral stone localization in ESWL.

Materials and Methods: Between January 2012 and December 2016, a total of 88 patients underwent ESWL with anterograde ureterography for radiolucent ureteral stone management. A database was kept prospectively for all patients. All patients underwent ESWL after urinary tract infection or acute renal failure was resolved. Ultravist® 370 mgI / mL contrast medium was diluted 1:1 with saline. About 5 to 8 cc of this solution was slowly injected through the PCN tract, confirming the renal pelvis and renal calyx. When the ureter was not well visualized or filling defect was not seen, additional contrast agent was injected, paying attention to the patient's pain, contrast leakage, and contrast reflux. The filling defect area was aligned to the F2 zone and then lithotripsy was done in the same manner as a conventional ESWL. Three days to two weeks later, anterograde ureterography was performed through the PCN tract and additional ESWL was performed if a filling defect was present. Stone free was defined as the absence of filling defects on antegrade ureterography or absence of residual stones on CT scan.

Results: The mean age of the patients was 64.45 ± 11.96 years, 62 men and 26 women. Of the 88 patients, 50 underwent PCN for acute renal failure, 38 others had PCN for urinary tract infection. The mean stone size was 9.44 ± 4.19 mm. The locations of ureteral stones were 47, 23, and 18 in the upper, middle, and lower, respectively. The mean number of ESWL received until the stone was discharged was 1.52 ± 0.83 times. The success rate of ESWL was 96%. There was no recurrence of urinary tract infection or acute renal failure.

Conclusion: When performing ESWL for radiolucent ureteral stone, antegrade ureterography using a PCN tract is useful and safe.

UP.493

Efficacy of Ureteroscopy with Pneumatic Lithotripsy for Ureteral Stone

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Introduction and Objective: To study the outcome and safety of ureteroscopy (URS) using pneumatic lithotripsy for treatment of ureteral stones.

Materials and Methods: A 2-years retrospective study (between Aprill 2015- March 2017) identified 112 patients undergoing URS lithotripsy with pneumatic lithotriptor in Urology Clinic "VITA Hospital" in Prishtina.

Results: There were 56.25 % man and 43.75 % women. The mean age was 42.5 age (range 14- 73 ages). In 53.6 % of patients stones were located in the right ureter, in 39.3 % of patients in left ureter and in 7.1 % of patients stones were located in both ureters. Stones in 27 cases (24.1 %) were located in the proximal ureter, in 29 cases (25.9 %) were located in the middle ureter and in 56 (50.0%) were located in the distal ureter. 81.6 % of patients were with stones smaller than 10 mm (range 4-33mm) and 28.9 % of patinets were with multiple ureteral stones. 16.9 % of stones were treated by extraction only. 29.5 % of patients were stendet before URS and 52.7% of patients were stendet during URS. The success rate depended on the location of the ureteral stone: proximal ureter 70.4 %, middle 89.7% and distal 96.4%. The rate of stone moving to lower pole calyces were 6.25 %. URS showed an overall success rate of 87.5 %. Finally, only 7 patients (6.25%) required an open stone surgery. We did not confront major complication.

Conclusions: Ureteroscopy using pneumatic lithotripsy for treatment of ureteral stones has been shown to be an efficient and safe procedure.

UP.494

The Application of a Modulated Laser Pulse (Moses Technology) to Enhance Holmium Laser Lithotripsy Efficacy – Initial Clinical Experience

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Introduction and Objective: The Lumenis High-power Holmium laser (120H) enables the surgeon to control the pulse width as well as a unique modulated pulse mode (Moses), design to enhance stone defragmentation and minimize retropulsion. Moses technology modulates the laser pulse to separates the water (vapor bubble), then deliver the remaining energy through the bubble. Proprietary laser fibers were designed for the Moses mode. Our aim was to compare stone fragmentation with and without the Moses mode and fiber.

Materials and Methods: We prospectively designed a questioner for the urologist to fill immediately after each ureteroscopy in which the Lumenis 120H was used. We compared between procedures with (23) and without (11) the use of Moses technology. We calculated total treated stone volume and density from preoperative Non-Contrast CT. Surgeons ranked the Moses mode in 23 procedures, in comparison to regular mode (worse, equivalent, better, much better). Total laser working time and energy were collected from the Lumenis 120H log.

Results: During 4 months, five urologist used the Lumenis 120H in 34 ureteroscpy procedures (19 kidney stones, 15 Ureteral stones, 22 procedures with Flexible ureteroscope and 12 with Semi-rigid). Table 1 summarizes the results of stone fragmentation with and without the Moses mode. Three urologists ranked Moses mode as much better or better in 17 procedures. In two cases, it was ranked equivalent and in 4 cases ranking was not done. Over all stone fragmentation with Moses utilized higher energy in less time to achieve satisfying stone fragmentation, our results demonstrated a trend and did not reach statistical significance (P=0.19). More research is needed to determine the best clinical settings for the use of the Moses technology.

Conclusion: The new Moses laser technology, demonstrated good stone fragmentation capabilities when used in a common clinical practice.

UP.494, Table 1.

	AGE average (median) years	GENDER M/F	TOTAL STONE VOLUME median, mm3 (25%-75%)	NCCT HU median, (25%-75%)	ENERGY USE median, KJ (25%-75%)	LASER WORKING TIME median, (25%-75%) Min	STONE FRAGMENTATION RATE, mm3/min (Volume/working time)
All Patients (n=34)	53.7±14.7 (54.5)	25M/9F	560.5 [192-1549.3]	895 [550-1090]	4.5 [1.6-12.9]	8 [3-13]	87.1 [32.4-130.1]
Moses Treated Patients (n=23)	54.6±16.1 (58)	15M/8F	781.9 [180.7-1691.3]	901.5 [553.5-1085]	4.5 [1.6-16.0]	6 [2.8-13]	95.8 [51.5-177.4]
Non-Moses Treated Patients (11)	51.9±11.8 (51)	10M/1F	422.5 [182.2-875.3]	867 [502-1268]	6.4 [2.6-11.9]	10 [2.5-15]	58.1 [30.8-102.4] P=0.19

UP.495

The New Disposable Digital Flexible Ureteroscope; In-Vivo and In-Vitro Assessment and Cost Effective Analysis of Reusable Flexible Ureteroscopes

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Introduction and Objective: The single use digital flexible ureteroscope (fURS), the LithoVue is an evolution in fURS design. We aim to measure the capability of this instrument in-vivo, *in-vitro*, and to compare it to standard fURS scopes in regard to manoeuvrability and cost effectiveness.

Materials and Methods: The LithoVue was examined and compared to Olympus URF-V and Stortz Flex Xc instruments. LithoVue scopes was used in 3 patients for the treatment of renal calculi. Finally, a study of standard fURS usage at our institution was performed for to assess the cost effectiveness of reusable instruments.

Results: Flexion of the Lithovue is 285°, the URF-V is 180° and the Flex Xc is 283°. Deflection for the Lithovue is 286°, the URF-V is 270° and the Flex Xc 219°. Superior range of movement of the Lithovue was maintained in both directions with an assortment of instruments in the working channel. The LithoVue then demonstrated acceptable ergonomics, manoeuvrability and image quality in-vivo treatment of renal stones in 3 patients. Cost analysis of 265 consecutive fURS procedures, revealed 15 occasion's major damage, costing $ 162,628 AUD. Meaning the meedian cost per case is $695 AUD. The cumulative cost of 28 cases with reusable fURS is approximately $50,000 AUD.

Conclusion: The LithoVue single use flexible ureteroscope that is analogous to reusable fURS scopes in regard to standard technical metrics. In 3 patients it performed commendably. Depending on its initial purchase cost it may also represent a cost saving for hospitals when compared to cumulative costs of maintaining reusable fURS.

UP.496

Experience of the Lumenis Smooth Tip DFL 200µm Laser Fibre

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Introduction and Objective: The management of larger stones by retrograde ureteral access is becoming more common and laser generating units capable of producing a high frequency pulse of laser energy have been developed. We review the initial impressions of a new laser fibre for both renal stone and tumour surgery.

Materials and Methods: Between May 2016 and October 2016, a total of 20 patients underwent flexible ureterorenoscopy for stone (18 patients) or renal transitional cell carcinoma (TCC) (2 patients). A pro-forma was completed by the operating surgeon detailing experience with the laser fibre at the end of the case.

Results: Five stones were located in the lower renal pole, 5 were in an equatorial calyx, 2 in the renal pelvis, 2 were multifocal and 4 were in the ureter. The mean stone size was 12mm (range 4 – 22mm). The mean laser energy used was 6 KJ (range 0.03-17.96). A stone dusting setting was used for all stones (power 0.2 – 0.3J, frequency 30-80 hertz); a fragmentation setting was also used in 8 patients (0.8-1J, frequency 10-20 hertz). Both TCC's were treated with 0.5J and 15 hertz. The overall performance of the fibre was deemed excellent in 7 cases, good in 10, fair in 1, poor in 1 and not rated in 1. The ability of the fibre to break stones was deemed excellent in 8 cases, good in 8 and poor in 1. The operating surgeon rated the passage of the fibre through a fully deflected flexible ureterorenoscope as excellent in 7 cases and good in 5 cases. In those cases where energy was applied through a deflected fibre the loss of energy was deemed excellent in 6 cases and good in 7 cases. In both cases of TCC the ablation of the tumour was deemed to be good. There were no adverse events noted.

Conclusion: The 200µm Smooth Tip DFL fibre was found to be robust and durable. The smooth-tip design allowed easy passage through a fully deflect endoscope, with apparent excellent energy transfer to the target.

UP.497

Supine Percutaneous Nephrolithotomy in Horseshoe Shaped Kidneys: A Case Series

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Introduction and Objective: Percutaneous nephrolithotomy (PCNL) demonstrates better results of stone clearance compared to ESWL or open stone surgery. Supine PCNL has not been reported in horseshoe shaped kidneys. Intraoperative and postoperative haemorrhage is a frequent complication. Transfusion rates of up to 34% have been reported. This procedure is more difficult in horseshoe shaped kidneys, given the anatomical distortion. We review outcomes of patients with horseshoe shaped kidneys undergoing supine PCNL.

Materials and Methods: A retrospective analysis of 7 patients undergoing supine PCNL over the past 7 years was conducted. Stone score, size, blood transfusion rate, length of stay and complications. All patients were placed in a semi supine position. The nephrostomy tract was dilated to 30fr using the amplatz system prior to stone extraction.

Results: Twenty nine percent of procedures were done on the right, 71% on the left. Guys stone score: 71% scored 2, 28% score 100% had a nephrostomy inserted post procedure with antegrade stents. Complete stone clearance was achieved in 90%. There was no post-operative bleeding or transfusion. The mean length of stay was days 3.4 (range 3 – 4). Post-operative haemorrhage requiring transfusion occurred in no patients. There were no complications or re-admissions. Further stone recurrence occurred in 42.8%- this was treated with ESWL.

Conclusions: Supine PCNL is a safe procedure, in patients with horseshoe shaped kidneys, providing adequate outcomes and stone clearance.

UP.498

GOAL ONE: Predictive Factors for Stone-Free Rate after Flexible Ureterorenoscopy Are Gender-Dependent

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Introduction and Objectives: The aim of this study was to identify prognostic factors for stone-free status after the first f-URS and laser lithotripsy.

Materials and Methods: Single institution, ambispective cohort of 222 consecutive f-URS cases. The outcome evaluated was the stone-free rate (< 4 mm residual stone) at 4 weeks after just one f-URS in plain abdominal radiography or computed tomography. Sixty four patients were discarded because of incomplete data or radiolucent stones in the preoperative evaluation. Assessed variables were gender, age, body mass index, side, stone number, burden, location and density; pelvicaliceal angle, ureteral stricture, use of anticoagulants or aspirin, double J pre-stenting, history of urinary tract infection, and previous open or endoscopic surgeries in the same renal unit. Only significant factors ($p \leq 0.10$) in univariate analysis were included in a backward Wald logistic regression for multivariate analysis ($p \leq 0.05$).

Results: Stone free rates were 58.46 and 56.98% for males and female patients respectively. In the multivariate analysis, the gender (G), obesity/overweight (O), age (A), size (L), occupied areas (O), number (N) and density (E) were factors predicting the stone-free status in general, but not every factor applied for each gender. Stone size, occupied areas, density and age were specific for male patients; and only obesity and number of stones for females (Table 1).

Conclusions: The acronym GOAL ONE represents the general factors leading to persistent stones in patients undergoing the first f-URS but surprisingly they are different for both genders. Largest series are required to confirm these findings.

UP.499

Same Session Bilateral Ureteroscopy for Renal and Ureteral Stones

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Introduction and Objective: Bilateral ureteroscopic lithotripsy as a single stage procedure would reduce costs and morbidity compared with staged procedure. We evaluated safety and efficacy of same session bilateral ureteroscopic lithotripsy for management of bilateral urinary system stones.

Materials and Methods: In this retrospective study 350 consecutive one side ureteroscopic procedure were done (group I), and 21 were done as same ses-

sion bilateral ureteroscopic lithotripsy for renal and ureteral stones (group II). In all patients stone fragmentation was completed with holmium: YAG laser and bilateral DJ stent inserted at the end of the operation. Patients were followed at least one month to evaluate clearance of stones, operative times, duration of hospital stay and complications. Stone-free status was defined as no fragments and/or the presence of asymptomatic fragments <2mm in the urinary system.

UP.498, Table 1. Predictive Factors for Stone Persistance at 4 Weeks after the First F-URS in Both Genders (n=158)

	Men n=65					Women n=93				
	Univariate			Multivariate		Univariate			Multivariate	
Variable	Stone free	Stone persistance	p	Adjusted OR	p	Stone free	Stone persistance	p	Adjusted OR	p
Stone free, n (%)	38(58.46)	27(41.53)				53(56.98)	40(43.01)			
Age, n (%)			0.015					0.611		
50 years or less	17(44.7)	4(14.8)		1		28(52.8)	19(47.5)			
More than 50 years	21(55.3)	23(85.2)		39.80(2.52-627.16)	0.009	25(47.2)	21(52.5)			
Stratified BMI, n (%)			0.706					0.007		
Normal or low weight	10(26.3)	6(22.2)				10(18.9)	18(45.0)		4.72(1.63-13.66)	0.004
Overweight and obesity	28(73.7)	21(77.8)				43(81.1)	22(55.0)		1	
Multiplicity of stones, n (%)			0.749					0.000		
Unique	21(55.3)	16(59.3)				43(81.1)	18(45.0)		1	
Multiple	17(44.7)	11(40.7)				10(18.9)	22(55.0)		9.06(1.95-27.83)	0.000
Location and multiplicity of stones, n (%)			0.105					0.002		
Ureteral	6(15.8)	1(3.7)		1		2(3.8)	1(2.5)			
Polar	15(39.5)	11(40.7)		71.32(2.09-2428.57)	0.018	32(60.4)	15(37.5)			
Pelvic or interpolar	2(5.3)	6(22.2)		1525.72(10.10-230297.25)	0.004	10(18.9)	3(7.5)			
Multiple kidney stones without ureteral involvement	15(39.5)	9(33.3)		2.74(0.20-37.15)	0.448	9(17.0)	21(52.5)			
Stone burden, n (%)			0.088					0.04		
10 mm or smaller	17(44.7)	5(18.5)		1		21(39.6)	19(25.0)			
11-20 mm	11(28.9)	11(40.7)		26.70(1.37-518.36)	0.03	24(45.3)	15(37.5)			
Larger than 20 mm	10(26.3)	11(40.7)		38.35(2.35-624.07)	0.01	8(15.1)	15(37.5)			
Previous UTI, n (%)			1.00					0.118		
Yes	37(97.4)	26(96.3)				41(77.4)	25(62.5)			
No	1(2.6)	1(3.7)				12(22.6)	15(37.5)			
Previous open surgery in the same renal unit, n (%)			0.291					0.356		
No	31(81.6)	19(70.4)				41(77.4)	34(85.0)			
Yes	7(18.4)	8(29.6)				12(22.6)	6(15.0)			
Previous endoscopic surgery in the same renal unit, n(%)			0.038					0.924		
No	20(52.6)	21(77.8)				22(41.5)	17(42.5)			
Yes	18(47.4)	6(22.2)				31(58.5)	23(57.5)			
Pelvicalicial angle, n (%)			0.224					0.696		
≤100°	36(94.7)	23(85.2)				49(92.5)	38(95.0)			
> 100°	2(5.3)	4(14.8)				4(7.5)	2(5.0)			
Hounsfield units (Essence), n (%)			0.016					0.488		
< 850	13(34.2)	3(11.1)		1		12(22.6)	8(20.0)			
851-1450	23(60.5)	17(63.0)		12.07(1.06-136.57)	0.044	33(62.3)	22(55.0)			
> 1450	2(5.3)	7(25.9)		22.66(1.16-442.20)	0.039	8(15.1)	10(25.0)			

Adjusted OR in multivariate analyses based on backward Wald method including only variables in univariate analysis with p≤0.10.
Columns in multivariate analysis show values only if a significant result was obtained (p≤0.05)
OR: Odds Ratio, F-URS: Flexible ureteroscopy, BMI: Body Mass Index, UTI: Urinary Tract Infection

Results: Mean age of groups was 50.1 and 55.4 respectively. Mean stone burden were 17.2 mm vs 30.6 mm respectively (p<0.05). Stone free rate were similar in two groups and ranged from 80-90% depending on stone location at one month. Operation time was longer for same session bilateral ureteroscopic lithotripsy (69.2 min vs 96.1 min) (p<0.05). Hospital stay was similar in two groups (1.2 vs 1.4 d). No patient had acute postoperative azotemia. There was no significant difference in pre and post operative serum creatinin level. There was no major complication between two groups. There is no significant differance about urinary tract infection between two groups (%4 vs %6).There is no difference about analgesic requirement between two groupes.

Conclusion: Bilateral same session ureteroscopy is a safe and effective treatment option for patients with bilateral ureteric and/or renal calculi, even with stones in multipl locations. Bilateral ureteroscopic lithotripsy can be considered a treatment option. While most complications are minor, they may be higher than that typically reported for unilateral ureteroscopic lithotripsy. Bilateral DJ stent should be placed in patients undergoing bilateral ureteroscopic lithotripsy for decreasing complications.

UP.500

Endourolgical Management of Upper Tract Stones after Urinary Diversion

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Introduction and Objective: To present our experience in endourological management of upper tract stones after urinary diversion.

Materials and Methods: From October 1983 to December 2012, 53 percutaneus nephrolithotomy (PNL) 9 antegrade URS and 6 retrograde URS procedures were performed in 52 men and 16 women after urinary diversion, with a mean age of 53.5 years. The urinary diversions were an ileal W neobladder, hemi-Kock pouch, ileal conduit, and rectal bladder in 34, 8, 18, and 8 patients, respectively. The median interval between diversion and stone management was 1.5 years. Success was defined as a stone-free, nonobstructed renal unit at 3 months after the intervention. Follow-up was performed every 6 months with intravenous urography or noncontrast computed tomography for diagnosis of stone recurrence and evaluation of renal morphology.

Results: Regarding the percutanouse approach, renal punctures were guided with ultrasonography in 18 patients (29.1%) and fluoroscopy in 44 (79.9) patients. One intraoperative complication (1.6%) and two postoperative complications (3.2%) occurred. All patients with ureteral stones became stone free after one procedure. Auxiliary procedures were needed in 10 (16.1%) patients after percutaneous nephrolithotomy; 6 patients required second session (9.6%) and 3 needed extracorporeal shock wave lithotripsy (4.8%). One patient with treatment failure in view of large inaccessible calyceal stones after ileal loop conduit underwent open surgery (1.6%), and two with small residual fragments were followed up. Long-term follow-up data were available for 55 patients. The stone recurrence rate was 8.06% (5 patients) after a median follow-up of 40 months (range 14 to 132). Recurrent stones were treated with extracorporeal shock wave lithotripsy. Regarding retrograde uretroscopy, the overall success rate was 100% (6 patients). No intraoperative or postoperative complications occurred. All patients became stone free after one procedure. No evidence of stone recurrence after long term follows up.

Conclusions: Percutaneous treatment of large upper tract stones after urinary diversion offers a high success rate with minimal morbidity. However, regular follow-up after treatment is recommended. Retrograde access in patients with urinary diversion is feasible and safe in most patients with orthotopic neobladder urinary diversion.

UP.501

Predictors of Recurrence after Treatment of Calculi of an Ileal Based Urinary Reservoir: Diversion Technique or Treatment Approach?

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Introduction and Objective: Recurrence of reservoir stones after treatment is a multifactorial process. Certain types of reservoirs and stone disintegration during its extraction are potential risk factors for recurrence. The objective of this study is to determine the predictors of recurrence after treating calculi of an ileal based urinary reservoir.

Materials and Methods: A retrospective review was performed through our database for patients who un-

UP.501, Table 1.

Baseline criteria		Group-II	P
Number of patients	75	55	
Number of stone episodes	75	115	
Age at time of 1st stone formation (mean ±SD) years	51.7 ±14.9	50.3 ±18.3	0.6
Sex			0.65
Male	60 (80%)	46 (83.6%)	
Female	15 (20%)	9 (16.4%)	
BMI (mean ±SD)	25.3 ±3.9	25.9 ±5	0.4
Time to 1st stone formation (mean ±SD) months	73.3 ±47	42.7 ±35.8	0.000
Post diversion follow up duration (mean ±SD) months	205.2 ±73	222.3 ±77.8	0.2
Presentation			0.84
Pain	20 (26.6%)	15 (27.2%)	
Hematuria	2 (2.6%)	2 (3.6%)	
Irritative LUTS	26 (34.6%)	22 (29.3%)	
Urine retention	20 (26.6%)	10 (18.1%)	
Incidentally discovered on follow up	7 (9.3%)	6 (10.9%)	
Voiding pattern			0.27
Urethral with Valsalva`s maneuver	63 (84%)	43 (78.2%)	
Urethral CIC	2 (2.6%)	5 (9.1%)	
Stomal CIC	10 (13.4%)	7 (12.7%)	
Type of reservoir			0.031
Orthotopicileal W neobladder	29 (38.6%)	10 (18.1%)	
Continent cutaneous double T-pouch	10 (13.4%)	7 (12.7%)	
Urethral Kock	36 (48%)	38 (69.2%)	
Treatment of 1st stone episode			0.69
Open	22 (29.3%)	14 (25.4%)	
Endoscopic	53 (70.7%)	41 (74.5%)	
Endoscopic access to the stone			0.73
Trans-urethral	49 (92.4%)	38 (92.6%)	
Percutaneous	2 (3.7%)	2 (4.92%)	
Trans-stomal	2 (3.7%)	1 (2.46%)	
Endoscopic stone extraction "1st stone episode"			0.005
Mechanical	53 (100%)	35 (83.4%)	
Pneumatic disintegration	--	6 (14.6%)	

UP.501, Table 2.

Stone criteria	Primary stones	Recurrent stones	P
Number of stones episodes	130	60	
Stone surface area (mean ±SD) cm3	4.3 ±2.5	3.8 ±1.8	0.1
Stone nature			0.1
Radio-opaque	72 (96%)	47 (85.5%)	
Radio-lucent	3 (4%)	8 (14.5%)	
Stone number			0.8
Single	43 (57.3%)	30 (54.5%)	
Multiple	32 (42.7%)	25 (45.5%)	
Stone density (mean ±SD) Hounsfield unit	686.5 ±372	766.3 ±360	0.5
Serum uric acid (mean ±SD) mg/dl	4.5 ±1.4	4.6 ±1.1	0.8
Concomitant upper tract stones	8 (10.7%)	4 (7.3%)	0.55
Positive urine culture	29 (38.7%)	22 (40%)	1
Organism			0.37
E coli	12 (41.3%)	10 (45.4%)	
Pseudomonas	2 (6.8%)	3 (13.6%)	
Klepsiella pneumonia	7 (24.1%)	1 (4.5%)	
Proteus	4 (13.8%)	3 (13.6%)	
Others	4 (13.8%)	5 (22.7%)	

derwent ileal based urinary reservoirs between 1980 and 2009. Patients who were diagnosed with reservoir calculi were identified. Records were reviewed for patients demographics, diversion details, stone criteria and details of treatment. The cohort was divided into primary (Non recurring) stone formers (group I) and recurrent stone formers (group II). History of stone formation before diversion was assessed.

Results: Out of 1965 patients with ileal based urinary reservoirs, 130 developed calculi in the pouch (75 patients in groupI and 55 in groupII) forminga total of 190 reservoir stone episodes. There were 107reservoir stone episodes developing in 74 Hemi-Kock pouches, 49 episodes in orthotopic ileal W-neobladders and 34 episodes in 27 continent cutaneous T-pouch procedures. The mean and median duration from diversion to first stone formation was 60.3 and 52.2 months, respectively. The mean and median post-diversion follow-up period was 212.4 and 207 months, respectively. Baseline criteria were similar among the study groups (P > 0.05) Table 1. On univariate analysis, recurrent reservoir stone formation was associated with shorter time to first stone occurrence (P=0.000), endoscopic disintegration during first stone treatment (P=0.005) and with Kock pouches (P= 0.031). On multivariate analysis, shorter time to first stone occurrence was an independent predictor of recurrence of pouch stones (OR; 0.978, 95%CI; 0.96-0.98, P; 0.000). There was no significant difference in the stone criteria between first time stones and recurrent pouch stones (P > 0.05).

Conclusion: Regardless the type of the reservoir and the treatment technique, earlier stone formation is associated with more propensity of reservoir stone recurrence.

UP.502

A Bibliometric Study of Percutaneous Nephrolithotomy' (PCNL) as Published on Pubmed Over 16-Years (2000-2015)

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Introduction and Objective: Percutaneous nephrolithotomy (PCNL) has been well established over the last 3 decades. However, with the advent of Minimally invasive PCNL (Mi-PCNL) techniques such as micro, ultramini and mini PCNL the indications for PCNL has broadened with more procedures being undertaken then ever before. With this in mind, we wanted to see the publication trends for PCNL as reported on PubMed over the last 16-years.

Materials and Methods: All published papers on 'Urolithiasis', 'kidney stones', 'renal stones', 'percutaneous nephrolithotomy', 'percutaneous stone surgery', 'PCNL' and 'PNL' were searched on PubMed over the last 16-years from 2000-2015. There were no language restrictions and all non-English language papers with published English abstracts were also included in our review. While review articles were included, case reports, laboratory and animal studies, and those papers that did not have a published abstract were excluded from our analysis. Data was divided into two 8-year periods, period-1 (2000-2007) and period-2 (2008-2015).

Results: A total of 1715 studies on PCNL were published on PubMed 16 year period [English language – 1568 (91%) and Non-English language – 147 (9%)]. There was a linear increase in the rate of PCNL over the study period from 18 articles in 2000 to 195 articles in 2015 (Figure 1) (p<0.001). When comparing the two time periods, there were a total of 358 articles published in period-1, which had increased by almost four times (rise of 279%) to 1357 articles in period-2 (p<0.001). The number of English/Non-English language articles in period-1 and period-2 were 316/42 and 1252/105 articles respectively.

Conclusion: Published papers on PCNL have risen over the last 8years (both in English and regional languages), highlighting a growing popularity of the modern minimally invasive PCNL techniques for stone disease.

UP.503

A Bibliometric Analysis of Open Surgery, Laparoscopic Surgery, Pyelolithotomy as Published on Pubmed Over a 16-Year Period (2000-2015)

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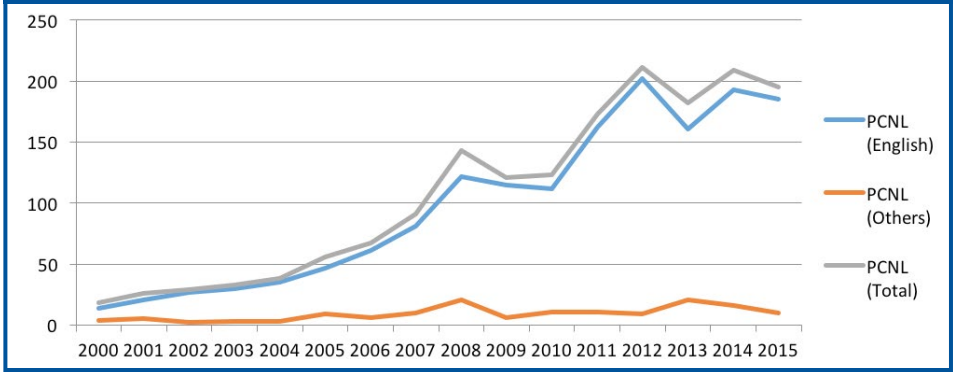
Introduction and Objective: There has been a gradual rise of kidney stone disease (KSD) over the last two decades with lifetime prevalence of urolithiasis being 14% (1 in 7). This rise has also seen a substantial increase in minimally invasive interventions for it. We wanted to see the publication trends for 'uncommon interventions (open surgery, laparoscopic surgery, and pyelolithotomy) for KSD' as reported on PubMed over the last 16 years.

Materials and Methods: All published papers on 'Urolithiasis', 'kidney stones', 'renal stones', 'ureteric stones', 'open stone surgery', 'laparoscopic surgery', 'robotic surgery', and 'pyelolithotomy' were searched on PubMed over the last 16-years from 2000-2015. Data was included for open stone surgery, laparo-

UP.502, Figure 1.



scopic stone surgery and pyelolithotomy. There were no language restrictions and all non-English language papers with published English abstracts were also included in our review. While review articles were included, case reports, laboratory and animal studies, and those papers that did not have a published abstract were excluded from our analysis. Data was divided into two 8-year periods, period-1 (2000-2007) and period-2 (2008-2015).

Results: During the last 16-years, a total of 331 papers have been published on interventions for KSD, including open stone surgery (n= 87, 26%), laparoscopic stone surgery (n= 209, 63%) and pyelolithotomy (n=35, 11%). While there was a steady decline for open stone surgery and pyelolithotomy (p<0,003), there was a steep rise in laparoscopic stone surgery(p<0,001) (Figure 1). When comparing the two time periods, there were 135 intervention papers in period-1, which had increased to 196 intervention papers in period-2 (Table 1). The increase was seen only for laparoscopic surgery (+116%, p<0.002) while it decreased for open surgery (-11%, p=0.17) and pyelolithotomy (-47%, p=0.002).

Conclusions: Published papers on intervention for KSD for laparoscopic surgery has risen over the last 8 years reflecting a rise in volume, training and possibly skills of laparoscopic and robotic surgery.

UP.504

Effect of Body Mass Index (BMI) on Outcome of Stone Free Rate Using a 3rd Generation Lithotripter

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Introduction and Objective: Fewer studies are available on 3rd generation lithotripter so we wanted to investigate the outcome of ESWL in terms of stone free rates in four different BMI groups according to the WHO classification.

Materials and Methods: From January 2014 to January 2016, ESWL was performed in 171 adults of more than 18 years old age. Modulith SL X lithotripter 4th generation Storz medical equipment was used for ESWL. The stone free rates, number of ESWL sessions required, complication rates and auxiliary procedures used were evaluated in a comparative manner. Exclusion criteria consisted of stones of ≥2 cm with longest diameter, pregnant women, urinary tract infection with fever, bleeding diathesis, and malfunctioned kidneys. We did Complete blood count, urine culture, coagulationprofile, ultrasonography andCT scan KUB (Kidney ureter and bladder) for all patients. Non obstructive or non- infected residual fragments of ≤4 mm were considered clinically inconsequential stone fragments and labeled as stone free in our study.

Results: Total of 171 patients with mean age of 42.64 ±15.82 years underwent ESWL. There were 125 (73.1%) males and 46 (26.9%) female. There were 11 patients in underweight group, 58 patients in normal weight group, 57 patients in overweight group and 45 patients in obese group. The mean stone size was 1.1±0.31 cm, 1.3±0.81cm, 1.27±0.48cm and 1.55±0.74cm in the respective groups. Number of of shock waves used was 3590±690, 3416±479, 3756±284 and 3604±514 in the respective BMI groups. Good fragmentation was seen in 7 (63.6%), 40 (69%), 39 (68.4%) and 32 (71.1%) respectively. Excellent fragmentation was seen in 2 (18.2%), 4 (6.9%), 5 (8.8%) and 1 (2.2%) patients respectively. Number of sessions used was 1.18±0.40, 1.48±0.73, 1.63±1.37 and 1.95±1.08 respectively. Stone free rate was 9/11 (81.8%), 37/58 (63.8%), 44/57 (77.2%) and 29/45 (64.4%) patients respectively (P value 0.061).

Conclusion: We concluded that there was no significant difference in terms of stone free rates between the four BMI groups according to the WHO classification.

UP.505

Difference of Outcome of Ureteroscopic Treatment of Ureteric Stones between Children of Age Less than 5 Years and More than 5 Years: A Single Center Study

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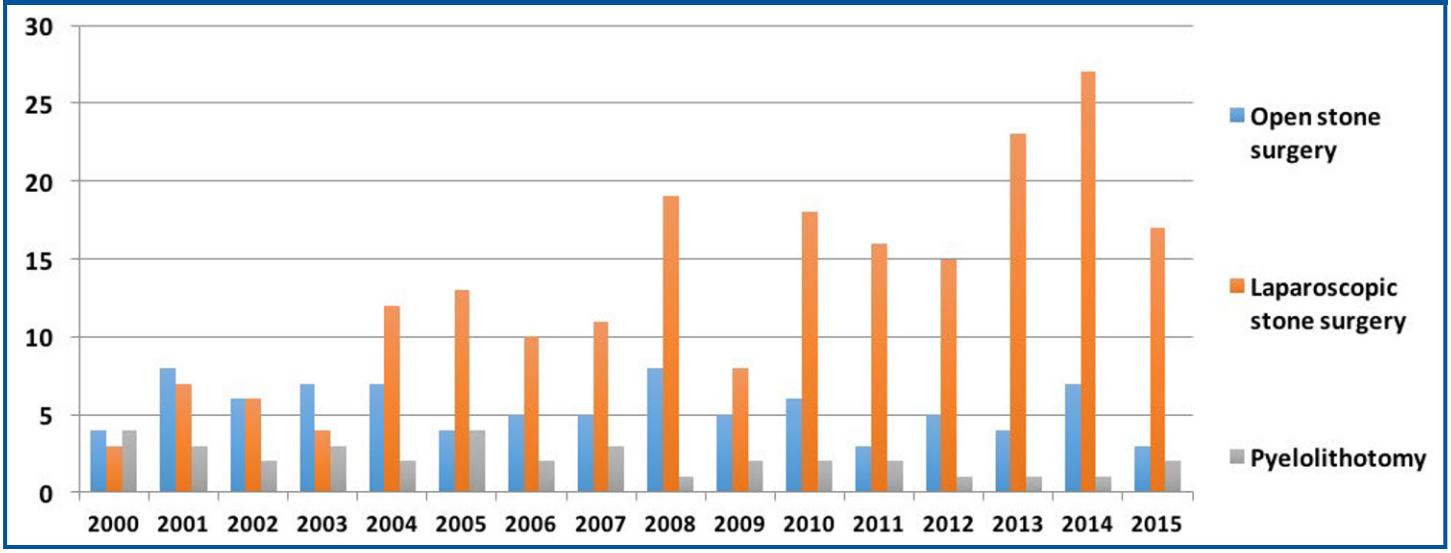
Introduction and Objective: We retrospectively reviewed the results of ureteroscopy mediated stone management in children of two age groups.

Materials and Methods: Between April 2013 and December 2016, 97 children underwent ureteroscopy (URS). Two age groups were made. Group 1 had 33 children aged less than 5 years while group 2 had 64 children of age more than 5 years. Semirigid ureteroscope of size 5/6 Fr was used to visualize ureteral stone and Swiss lithoclast for stone fragmentation. Stone free rate was defined as residual stone fragment less than 3 mm on follow up X ray KUB (Kidney ureter and bladder) after 2 weeks of ureteroscopic intervention. Patients were assessed for stone size, mean operative time, mean hospital stay, stone free rates, re-

UP.503, Table 1.

	Open surgery	Laparoscopic surgery	Pyelolithotomy	Total
2000-2007	46	66	23	135
2008-2015	41	143	12	196
% change in two time periods	-11%	+116%	-47%	+45%
Total (2000-2015)	87	209	35	331

UP.503, Figure 1.



check URS and complications.Data analysis was done using SPSS version 16.

Results: Mean age was 2.2±1.2 years for group 1 and 10.9±3.7 years for group 2. Mean stone size was 9.5±5.35 min group 1 and 11.16±6.7 mm in group 2. While mean operative time was 59 minutes and 52 minutes for group 1 and 2 respectively. Mean hospital stay was 1.7 days and 1.9 days respectively. Stone free rate after single procedure was 82% for children age less than 5 years and 88% for children age more than 5 years. Mean number of procedure per patient was 1.56 for group 1 and 1.4 for group 2. Post op complication was seen in 2 children (12.4%) in group 1 and in 1 patient in group 2 children.

Conclusion: Ureteroscopy for ureteral stone treatment is effective in all age groups of children with a low complication and high stone-free rate.

UP.506

Effectiveness of S.T.O.N.E Score in Predicting the Outcome of Ureteroscopic Pneumatic Lithotripsy (URS)

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Introduction and Objective: To assess the usefulness of S.T.O.N.E scoring to quantify the stone characteristics and predict outcome of the URS in treating ureteric stones having different characteristics.

Materials and Methods: It was a retrospective study in which 142 patients underwent URS from December 2013 till December 2016. Five stone characteristics were evaluated on CT scan. These included size of stone, location of stone, degree of ureteric obstruction, Hounsfield units of stone and number of stones present in the ureter. The stone free rates, number of URS sessions required, complication rates were evaluated in a comparative manner.

Results: There mean age of patients was 43.11±13.23 years. Stone free rate was seen in 74/82 patients (90%) having STONE score >10 and in 46/60 (76.7%) Patients having STONE score > 10 (p value=0.03).Complications including mucosal injury, fever, severe pain and UTI were seen in 10/82 (12%) and 12/60 (20%) patients in the two groups (P=0.24). Stones having higher clearance rates were had mostly distal location, HU less than 750 and grade 1 ureteric dilatation.

Conclusion: The S.T.O.N.E. Score can help in predicting the outcome after URS. It needs further large scale studies to further establish its role.

UP.507

Comparison of Guy's and S.T.O.N.E. Nephrolithometry Scoring Systems in Terms of Predicting Stone Free Rates and Complications Post-Per Cutaneous Nephrolithotomy

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Introduction and Objective: We aimed to compare the effectiveness of Guys and STONE scoring systems in predicting stone free rates and complications at our center.

Materials and Methods: It was a retrospective study in which 403 patients were included who underwent PCNL from July 2010 till August 2016. Guy's and S.T.O.N.E. scoring was done for each patient based on CT scan images. Patients below age 17 years, those having positive urine cultures, coagulation disorders and skeletal deformity were not included in the study. All procedures were done in prone position under general anesthesia. Post operatively patients were evaluated with X-Ray KUB or Ultrasound KUB or both to see stone residual fragments. Stone free rate was defined as no visible stones or residual fragments size less than 4 mm.Patients charts were reviewed for different variables.

Results: The mean age of patients was 42.14±13.7 years .The mean Guy's grade was 1.5, and the mean S.T.O.N.E. score was 8.1.The mean operative time was 140±64 minutes, hospital stay was 3.3±1.3 days. In complications fever was seen in 15 patients, SIRS in 10 patients(2.4%), post op sepsis was seen in 5 patients (1.2%), blood transfusion was needed in 26 (6.4%),perinephric collection in 13 (3.1%) patients and respiratory tract infection in 17 (4.21%) patients. The mean Guys score was 1.3 in stone free patients and 2.1 in those without stone free status (p 0 .007). Similarly the S.T.O.N.E. score was 7.8 vs 8.8 in stone free and stone failure groups (p 0.02).Both scores were strongly correlated to operative time (p value 0.008 for Guys and 0.013 for STONE score).There was no significant correlation of both Guys and STONE scoring with complications. Similarly both score could not well predict the significant difference of hospital stay. In contrast to some variations in literature we had good correlation of STONE score to stone free rates even in cases done by junior surgeons. Same was true for Guys stone score.

Conclusion: Both scoring systems were effective in predicting the operative time and stone free rates. However they did not show strong correlation with complications. More effective predictive tools are needed in future.

UP.508

Anatropic Nephrolithotomy: Where Do We Stand?

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Introduction and Objective: Advances in endourology have greatly reduced indications for open surgery in the treatment of staghorn kidney stones. Staghorn calculi are still a menace in the stone belt of India and still a therapeutic challenge in many cases. Widely accepted method PCNL, may not be efficient, technically demanding and may be associated with more complications. We observed 27 cases of complex staghorn calculi managed with open nephrolithotomy.

Materials and Methods: Observational study of patients who underwent anatropic nephrolithotomy for their complex staghorn at B.T.Savani Hospital from JANUARY 2012 to DECEMBER 2015. Total of 27 patients were included in this study. They were measured for mean operative time, blood loss, residual stones, infection and deterioration in renal function post operatively. We did some modification from standard procedure in form of: 1) No water tight closure of system, 2) No pre operative stenting, 3) No dissection of posterior segmental artery, 4) No use of methylene blue.

Post operative we did DTPA scan on follow up after 6 months of surgery.

Results: Mean operative time was 160 minutes (range 120 to 170). Mean blood loss was 400cc (range 200 to 650). Mean transfusion rate was 1.2 units (range 0 to 3).mean cold ischemia time was 20 minutes (range 15 to 35). Post operative complications were present in 3 patients (8%). One patient had urinomas and 2 had post operative urosepsis, all were treated conservatively. Mean hospital stay was 5 days (range 4 to 10). Stone-free status of the kidney was confirmed after surgery with x ray KUB and mean stone free rate was 94%. Only 2 patients had post procedure small residual non obstructive stone. The renal function was unaffected based on preoperative and postoperative DTPA Scan. Two patients had improved GFR while 3 had worsening of GFR which was statistically not significant.

Conclusions: Anatropic nephrolithotomy has good stone clearance in single sitting resulting in better satisfaction of patient, without compromising renal function and significant morbidity. Anatropic nephrolithotomy is still good option in modern era in high stone burden area with limited facilities.

UP.509

Open Surgery in Treatment of Staghorn Kidney Stones in Kosovo. The Need for Change

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Introduction and Objective: Staghorn stones are frequently cause a non-functioning kidney. In the present study, we examined the clinical - pathomorphological characteristics and treatment of staghorn kidney stones in Kosovo.

Materials and Methods: A five years study for all patients underwent open stone surgery for staghorn kidney stones in University Clinical Center of Kosovo, Clinic of Urology in Prishtina.

Results: Out of 373 patients with renal stones, 53 were with staghorn kidney stones (14.2 %). There were 18 men (34 %) and 35 women (66 %) ranging in age from 14 to 71 years (mean age 42.93 year). Staghorn stones in the right kidney were 51%, in the left kidney 43 % and bilaterally 8 %. 70% were complete and 30% were partial staghorn kidney stones. Fifty one percent of patient with staghorn stones were with family history of kidney stones. Out of 53 procedures performed for open surgical staghorn kidney stones removal, 17 were pyelolithotomy (28.10 %), 11 were pyelonephrolithotomy (20.60%), 3 were anatrophic nephrolithotomy (5.70%), 3 were radial nephrolithotomy (5.70%) and 3 were others operations. The most common complications were wound infection in 34 % patients and transfusion rate was 32 %.The mortality rate was zero. The residual stone rate was 45.4% and the recidiv stone rate after two years was 33.4%.

Conclusions: In Kosovo as in many of developing countries, at the moment, open surgery in treatman of staghorn kidney stones is less expensive and more

easily available than minimally invasive alternatives. It will be necessary professional education of urologists and to supply urology departments with modern equipment for minimal invasive intervention (PNL, RIRS).

UP.510

Comparison of The Morbility Associated with the Use of Single vs Double Loop Ureteral Stents Following Endoscopic Treatment of Ureteral Lithiasis

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Introduction and Objective: Urinary lithiasis is a prevalent condition, affecting especially the population of developed countries. Endoscopic surgery of ureteral calculi is one of the multiple possible treatments of this condition. After completing the fragmentation of the stone, one must consider placing a ureteral stent that warrants urine drainage in case a new obstruction develops from stone fragments or post-instrumentation mucosal edema. The placement of a double loop stent is frequent but may lead to significant morbidity, namely discomfort, pain, infection, lower urinary tract symptoms (LUTS), hematuria and incrustation, which may occur in a big proportion of patients (10-85%). The objective of this work was to compare the post-surgical morbidity associated with the use of two different ureteral stents (single vs. double loop) after endoscopic treatment of ureteral lithiasis.

Materials and Methods: A retrospective analysis of the patients submitted to endoscopic treatment of ureteral calculi with ureteroscopy and lithofragmentation with Holmium: YAG laser in 2015 was done. Of 141 ureteroscopies, 70 procedures met the inclusion criteria and were divided in two groups, according to the type of stent used (Single loop – n=36; Double loop – n = 34). The exclusion criteria were: the rpesence of more than 3 comorbidities; single kidney; ipsilateral renal lithiasis; residual intra-operative lithiasis (>3mm and/or pushback) and intra-operative complications. The removal of the single loop stent was done before discharge (up to 48h) while the double loop stents were removed in an outpatient setting (at least 7 days after the procedure).

Results: No statistically significant differences were observed between the two groups, concerning gender (52.6% men), age (55±12.58 years), number 1.10±0.35), local and size (9.43±3.48mm) of the stones, side of the kidney and length of stay (p>0.05). The single loop stent demonstrated statistically significant advantage concerning post-operative complications, like hematuria, LUTS and pain (2.7% vs. 47%; p<0.01) and emergency department visits (0 vs. 0.38; p<0.01). The number of days from placement to removal of the stents was also significantly different (1.3 vs. 48.7; <0.01). There were no significant differences between the stone-free rate between both groups

Conclusions: This study suggests that the use of single loop stent during the hospital stay may be preferrable to the use of double loop stents after ureteroscopies since it is associated with lower morbidity and associated costs for the precedure and it does not require a second procedure for the removal of the stent.

UP.511

Extracoporeal Shock Wave Lithotripsy Treatment for Radiolucent Ureteral Stone with the Help of Retrograde Ureterography Using a Flexible Cystoscopy

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Introduction and Objective: Localization of the radiolucent ureteral stone during ESWL is difficult. Intravenous contrast medium (IV-CM) administration may overcome this problem. However, IV-CM has several side effects. Patients at risk for adverse reaction to contrast include those with taking Metformin, previous adverse reactions, history of asthma, heart failure, renal insufficiency, and dehydration. We report our experience that ESWL with retrograde ureterography (RGU) for radiolucent ureteral stone localization in patients who have risk factor for IV-CM adverse effect.

Materials and Methods: Between October 2016 and March 2017, a total of 16 patients underwent ESWL with RGU for radiolucent ureteral stone management. All patients had one or more risk factors for IV-CM adverse effect as stated above. All patients were treated on an outpatient basis under analgesia and light sedation if required. The patient prepared the genitalia in an aseptic manner with the supine position on the lithotripsy table. A ureteral catheter was inserted into the ureteral orifice using 17Fr 'cystoscopy and RGU was performed by injecting diluted contrast media. Contrast medium was injected with as little pressure as possible to prevent the stone upward migration. The filling defect area was aligned to the F2 zone and then lithotripsy was done in the same manner as a conventional ESWL. One to two weeks later, CT scan was performed and additional ESWL was performed if a stone was present. Stone free was defined as the absence of residual stones on CT scan.

Results: The mean age of the patients was 64.8±11.2 years, 11 men and 5 women. There were 10 patients had taken Metformin, 8 with renal failure, 4 with contrast allergy, 3 with asthma, and 2 with heart failure. The mean stone size was 8.6±2.5 mm. The mean number of ESWL received until the stone was discharged was 1.3±0.6 times. The success rate was 88%. There was no occurrence of serious adverse effects.

Conclusion: When performing ESWL for radiolucent ureteral stone, RGU using a flexible cystoscopy is useful and safe. We recommend using this method in patients who are expected to have side effects of IV-CM.

UP.512

Evaluation of Ureteral Wall Injury Due to Ureteral Access Sheath Insertion during Flexible Ureteroscopy

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Introduction and Objective: To evaluate the ureteral wall injury due to ureteral access sheath insertion during flexible ureteroscopy and to detect whether the pre-operative Double-J stenting could decrease the severity of ureteral wall injury.

Materials and Methods: One hundred and twelve patients who underwent flexible ureteroscopy were randomly divided into two groups.The 55 patients in group A underwent Double-J stenting 2-3 weeks before flexible ureteroscopy and the 57 patients in group B underwent flexible ureteroscopy without pre-operative Double-J stenting. The severity of ureteral wall injury duo to ureteral access sheath insertion wws compared between two groups. The classification of ureteral injure after RARS is according to the Oivier Traxer`s classification (J urol 2013,189:580-584)

Results: In group A, there were 53 patients sufferred from low grade (grade 0 and grade 1) ureteral wall injury due to ureteral access sheath insertion,and only 2 patients sufferred form high grade (grade 2-4) injury.But in group B, there were 33 patients sufferred from low grade injury and 24 patients sufferred from high grade injury.There was significent statistical difference between the two groups

Conclusion: The insertion of ureteral access sheath can cause different grades of ureteral wall injury and pre-operative Double-J stenting can decrease the risk of high grade injury.

UP.513

How Is Renal Function Affected by Percutaneous Nephrolithotomy? A Retrospective Single Center Study

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Introduction and Objective: Percutaneous management of kidney stones is and undisputed first line option for high volume lithiasis. A high success rate coupled with a manageable complications rates make this a very interesting option. Concerns about renal function after a percutaneous approach due to renal damage seem to be unfounded according with previous small number of papers published. In order to better understand the impact this treatment can have on renal functions, or even if it is possible to predict it, we performed a retrospective study in our center.

Materials and Methods: Retrospective study in all eligible studies of renal lithiasis treated with percutaneous access at our center between 2012 and 2015. Single variable statistical analysis was performed.

Results: Fifty-two cases were included. Forty percent of patients were male, with a mean age of 56 (±10.6) and a mean BMI of 23,81 Kg/m2 (±3.8). According to Guy's Stone Scale 30%, 25%, 20% and 35% of cases were classified as grade I, II, III and IV respectively. In terms of preoperative renal function, 56% of patients were grade I, 32% grade II, and 12% grade III (KDOQI). All patients were treated in modified Valdivia-Galdakao position. The mean operative time was 174 minutes (±29.3). The mean variation of estimated creatinine clearance was of 3,079 ml/min (±24.3), and only 2 patients had a change in renal function grade. There was no difference in the variation of clearance in terms of GSS degrees, preoperative renal function,

KDOQI grade, sex or age. There was a weak correlation between the operative time and the change in renal function.

Conclusion: Renal function, measured as creatinine clearance, doesn't seem to be affected by percutaneous management of kidney stones. Although a weak association was found between operative time and change in creatinine clearance, a bigger sample is needed.

UP.514

Rare Foreign Bodies in Female Bladder Not Related to Autoerotism

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Introduction and Objective: Usually foreign bodies in the lower genitourinary tract are self inserted via the urethra as the result of exotic impulses , psychometric problems , sexual curiosity or sexual practice but in our finding in the last 10 years we faced 8 cases of foreign body unusually reviewed in the literature , so our objective is to widening the spectrum of thinking about the persistent cystitis in females and do imaging early in highly suspicious cases.

Materials and Methods: From 2006-2016, 8 cases of females presented complaining of persistent dysuria ,In Seuz Canal University hospital and Sharkia Health Insurance area , laboratory investigation and imaging revealed migrating Intrauterine contraceptive device (IUDs) and pin needle casing large stone.

Results: Median age of patients 32 (9-48) years , 7 cases of stones on top of migrating IUDs ,mean stone size 2.3 (0.8-42.3) cm , and only one case of large stone on top of pin needle measure 5.2 cm in 9 years old girl. All cases of IUDs stones removed endoscopically after intracorporeal dissentigration of the stones , the pin needle stone was managed by open surgery.

Conclusion: Foreign bodies in the female urinary bladder requires prompt management by early imaging in highly suspected cases , endoscopic management is the main treatment except in large stone burden with risk of genitourinary trauma .

UP.515

Does the Body Mass Index Influence on the Results of Percutaneous Nephrolithotomy?

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Introduction and Objective: Percutaneous nephrolithotomy is the technique of choice for the treatment of renal stones greater than 2 cm. Obesity is an increasingly common condition in the population. Our objective was to analyze the influence of body mass index (BMI) on the results of percutaneous nephrolithotomy in terms of efficacy and safety.

Materials and Methods: We analyzed the 102 percutaneous nephrolithotomies performed at our hospital in the last 10 years. We used the WHO classification to divide patients into groups according to their BMI and the modified classification of Clavien for the surgical complications.

Results: The mean age of the patients was 50.9 years. The mean BMI was 28.51. The mean surgical time was 148.5 minutes and the mean hospital stay was 5.5 days. The rate of postoperative complications was 23.5% (most of them Clavien I and II). The stone free rate (SFR) was 61.8%. 32.8% of the patiens had a normal BMI (18.5-24.9kg/m2), 29.8% had overweight (25-29.9), 20.9% were obese class I (30-34.5), 13.5% were class II (35-39,9) and 3% class III (≥40). There were no statistically significant differences between the groups according to the BMI in terms of complications and SFR. As BMI increased, there was a tendency to increase intervention time and hospital stay, although these differences were not significant.

Conclusions: Percutaneous nephrolithotomy is a safe and effective technique and its results are independent of BMI. However, special care must be taken when intervening obese patients as they can represent a real challenge for the surgical technique and postoperative care.

UP.516

Digital Flexible Ureteroscopy in Multiple Renal Calculi

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Introduction and Objective: The aim of this study was to assess the efficacy of digital flexible ureteroscopy (fURS) in patients with multiple renal stones.

Materials and Methods: Patients were treated using an Olympus URF-V2 flexible ureteroscope and a Holmium laser of 20 watt power and 2.1 µm wavelength for stone lithotripsy. Patients were considered stone-free if no residual stones were observed endoscopically and fluoroscopically at the end of the procedure. Between January 2016 and January 2017, a total of 36 patients with multiple renal calculi were evaluated as part of this retrospective analysis (13 patients with stone size over 10 mm and 23 cases of calculi smaller than 10 mm).

Results: The mean patients' age was 52 years (range 25-77 years) and the mean stone size was 12.5 ± 6.1 mm. The mean number of stones was 3.27 ± 2.14. The overall stone-free rate after a single fURS procedure was 77.8%. In the remaining patients with residual stones, the mean stone burden was reduced from 12.8 ± 8.6 mm to 5.2 ± 3.2 mm. The stone-free rate was 69.2% in patients with a stone burden over 10 mm and 82.6% in cases involving a stone burden below 10 mm, respectively. Complications have been recorded in 8.3% of the patients (2 cases of urinary tract infection 1 of hematuria, all initially diagnosed with calculi larger than 10 mm).

Conclusions: Digital flexible ureteroscopy is a safe and effective treatment option in patients with multiple unilateral renal stones. Single procedure stone-free rates are high with a low rate of only minor complications.

UP.517

Flexible Ureteroscopy Routinely Applied in 10 Years of Clinical Practice

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Introduction and Objective: During the recent years, flexible ureteroscopy has become a routine procedure with wide applications. The aim of this retrospective study was to evaluate the indications, limits and efficacy of flexible ureteroscopy in a significant number of cases.

Materials and Methods: Between January 2007 and January 2017, a total of 1227 diagnostic and treatment retrograde flexible ureteroscopic procedures were performed. There were retrospectively reviewed the indications, types of endoscopes, surgical efficacy and complications' rates.

Results: A fiberoptic first generation Storz flexible ureteroscope was used in 194 cases, a digital Flex-Xc device in 691 cases, a fiberoptic Wolf Cobra in 68 cases, a digital Olympus URF-Vo instrument in 181 cases and an Olympus URF-V2 digital endoscope in 93 cases. 9.9% of the procedures were diagnostic, 3.2% therapeutic for upper urinary tract tumors and 86.9% for pyelocaliceal lithiasis. During the diagnostic procedures, inspection of the entire upper urinary tract was possible in 90% of the cases (1105 patients). The stone-free rate in cases of lithiasis was 93.8% after a single procedure, 95.4% after the second one and 98.1% after the third one. The complications' rate was 20.6% (17.6% Clavien I and II, 5.1% Clavien III, 0% Clavien IV and V).

Conclusions: The retrograde flexible ureteroscopic approach is an efficient diagnostic and treatment method for renal pathology in general, with a particularly high succes rate in cases of renal stones. The complications' rate is relatively reduced, most of them being minor ones.

UP.518

Vidoescopic Retrograde Intrarenal Surgeries: Initial Experience Performed by Single Surgeon

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Introduction and Objective: The development of Videoscopic flexible ureterorenoscope (fURS) has had a significant impact on the development of the technique in reterograde intrarenal surgery (RIRS). The clarity of the digital image and the lightness of the instrument can make complex stones surgery or prolonged operation possible. Therefore, we report 100 consecutive cases of Videoscopic RIRS by single surgeon.

Materials and Methods: From January 2015 to August 2016, we analyzed the results of Videoscopic RIRS for 100 patients who underwent primary treatment for renal, renal pelvic, and ureteropelvic stones. Videoscopic RIRS were performed with URF-V, V2

(Olympus) and FLEX-Xc (KARL STORZ). A 11-13 Fr or 12-14 Fr access sheath (Uropass; Olympus) was inserted under fluoroscopic guidance, and stones were identified after insertion of fURS. Lasering was performed using 200-µm fiber and VersaPulse (Lumenis). Stone was extracted from the stone using a stone basket (Zerotip; Boston), and ureteral stent was inserted and the operation was finished. Non-contrast computed tomography was taken at 1 and 3 months postoperatively to confirm stone-free.

Results: The mean age of the total patients was 59.96±13.97 years and the male to female ratio was 69:31. The mean length of stone treated was 13.07±7.18 mm. The average mean stone density (MSD) of stone was 734.16±327.61 HU and the stone heterogeneity index (SHI) was 240.99±119.59 HU. The mean operation time of all patients was 74.03±47.34 min, and 19 patients were operated on bilateral and other operations at the same time. The mean operation time was 66.61 ± 46.70 minutes considering each renal unit. The stone-free rate at 3 months postoperatively was 87%. Five patients underwent additional treatment after surgery. Stone length (OR 0.90; 95% CI 0.83-0.99; *P* = 0.031) and MSD (OR 0.99; 95% CI 0.99-0.99; P=0.007) were significant factor for stone-free in the univariate analysis, however, multivariate logistic regression model deomstrated that MSD was only significant factor for stone-free (OR 0.99; 95% CI 0.99-0.99; P=0.043).

Conclusions: Videoscopic RIRS showed a high stone-free rate of 87% and 5% of the patients who received additional treatment after surgery. Only low MSDs were significant predictors of stone-free rate in Videoscopic RIRS.

UP.519

Factors Affecting Stone Free Rate Following Percutaneous Nephrolithotomy: A New Look at an Old Issue

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Introduction and Objective: Renal stones is a common disease and percutaneous nephrolithotomy (PCNL) is commonly used operation. The purpose of this study is to evaluate the factors affecting stone-free rate following percutaneous nephrolithotomy.

Materials and Methods: We retrospectively analyzed the medical records of patients with renal stones who underwent PCNL in one tertiary hospital from January 2010 to June 2015. Patient's demographics as well as stone composition were reviewed. Fisher's exact test and logistic regression were applied for univariate analysis and multivariate analysis respectively in order to determine the factors affecting stone-free rate.

Results: A total of 515 procedures were performed for patients with renal stones. The Stone-free rate in our study was 50% (257/515). The mean patient age was 54.77±11.78 years. The mean operating time was 86.32±32.63 minutes and the mean length of hospital stay was 4.25±5.48 days. Using the univariate analysis, significant factors affecting stone-free rate were BMI≥27 (p=0.034), the number of calyx with stone involvement (p<0.001) and stone length ≥ 50mm (p<0.001). On multivariate logistic regression analysis, the number of calyx with stone involvement (OR=0.316, 95% CI: 0.246-0.406, p<0.001) and stone length ≥ 50mm (OR=2.44, 95% CI: 1.08-5.52, p=0.032) had a significant impact on the stone-free. However, gender, age, side of procedure, pre-operative hydronephrosis, access sheaths size (24F VS 30F), renal access by urologists or radiologists were not statistically significant factors.

Conclusions: Stone length ≥50mm and the number of calyx with stone involvement are the significant factors affecting stone free rate.

UP.520

Clinical Experience and Management of Encrusted Ureteral Stent

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Introduction and Objective: Ureteral stent (US) is a fundamental part of many urological procedures. The severe encrustation may cause obstructions and threaten the renal unit. And endourological and some additional procedures could be needed to manage them. We tried to provide our clinical experiences and managements of encrusted US.

Materials and Methods: A total 975 patients had stents inserted for the treatment of urinary calculi, malignant ureteral obstruction, after percutaneous nephrolithotomy, pyeloplasty, or injury to the ureter and kidney etc. The stents were encrusted in 34 (3.5%) patients: 28 men and 6 women. The stents were inserted in 29 patients due to stone disease and in 5 patients for the malignant obstruction. The US used in this series was made of polyurethane manufactured by Cook®. Anatomical abnormality, presence of encrustation on the stent and associated stone burden were evaluated using plain radiography and intravenous pyelography. Treatment decisions were made based on the clinical presentation and image findings of each patient.

Results: The average duration of stent placement was as follows: stone disease 8.5±1.7 months (1.25-11 months) versus malignant obstruction 13.7±2.4 months (4-16 months). In 29 patients, cystoscopic stent removal was failed and additional procedures were needed. A total of 42 sessions of additional procedures were required to render patient stent free. Most patients (25 patients, 85.3%) were made stent free in single additional session, the others required more than one session. Additional procedures were as follows: SWL (23, 54.7%), ureteroscopy (URS) with forceps retrieval (7, 16.6%), URS with intracorporeal lithotripsy (10, 23.8%) and open surgical removal (2, 4.9%). All patients were eventually rendered stent and stone free.

Conclusions: Most forgotten stents are expected to have severe encrustation. Patient with stone disease developed encrustation on the stent in shorter period than those with other disease. To prevent the forgotten stent, we are planning to provide detailed patient education and develop computerized tracking system.

UP.521

Tubeless versus Standard Percutaneous Nephrolithotomy in Pediatric Patients: A Systematic Review and Meta-Analysis

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Introduction and Objective: This systematic and meta-analysis was designed to evaluate the post-operative outcomes between tubeless and standard PCNL among children.

Materials and Methods: We performed a critical review of PubMed/Medline, scopus, google scholar and

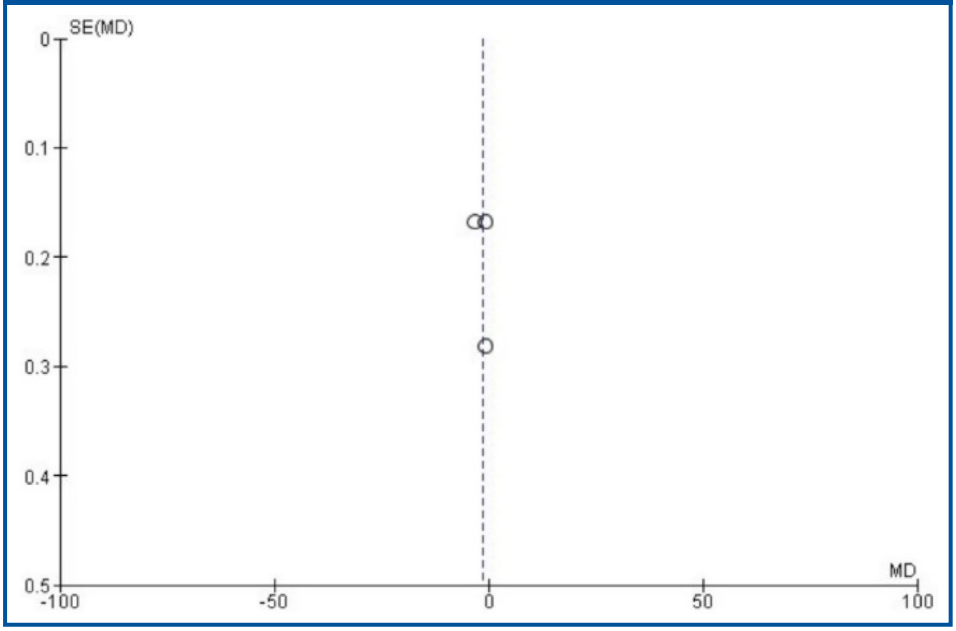
UP.521, Table 1. The Characteristics of Included Study Which Reported Mini versus Standard PCNL Outcomes in Children

Studies	Number	Renal units	Participants mean age (months)	participants sex M/F	Stone burden (mm)	Operative time (min)	Hemoglobin decrease ± SD (mg/dL)	Blood transfusion rate	Perirenal fluid presence	Post-operative fever	Stone clearance rate	Length of hospital stay (days)	Second operation	Numbers of nephrostomy access tracts	
														1	2
Song et al.13	35 vs. 35	35 vs. 35	20.30 ± 6.35 vs. 20.10 ± 7.22	-	23.2±10.7 vs. 24.0±13.9	51.97±11.70 vs. 55.00±14.45	0.90±0.20 vs. 0.81±0.21	0 vs. 0	3 vs. 0	2 vs. 3	34 vs. 33	4.6±0.74 vs. 7.74±0.78	0 vs. 0	34 vs. 34	1 vs. 1
Samad et al. 12	26 vs. 28	30 vs. 30	75.6±43.2 vs. 86.4±38.4	16/10 vs. 15/13	20.4 ± 9.3 vs. 28.6± 16.7	66.9±22.9 vs. 54.0±20.7	0.63±0.54 vs. 0.78±0.69	0 vs. 0	0 vs. 0	4 vs. 3	28 vs. 26	1.6±0.7 vs. 2.4±1.3	2 vs. 4	-	
Aghamir et al. 11	13 vs. 10	13 vs. 10	123.7±32.1 vs. 133.2±20.6	10/3 vs. 6/4	29.23 ± 4.85 vs. 31.40 ± 5.19	63.5±11.5 vs. 66.4±7.5	1.05±0.39 vs. 1.26±0.32	0 vs. 0	1 vs. 1	2 vs. 3	11. vs. 10	1.6±0.4 vs. 2.4±0.4	2 vs. 0	11 vs. 8	2 vs. 2

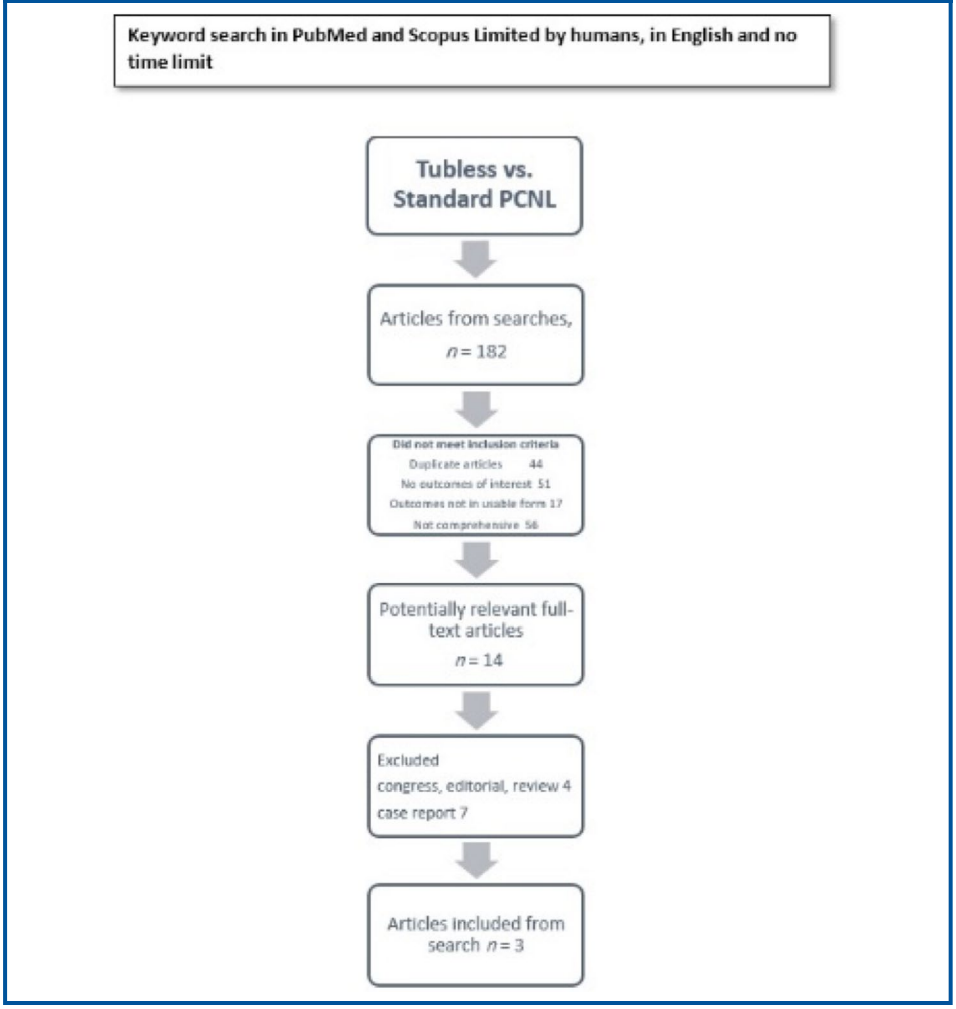
Data is presented as number and Mean±SD

the Cochrane Library in December 2016 according to PRISMA statement. A systematic review and meta-analysis conducted with three trials to investigate the outcomes including the length of hospital stay, operation time, hemoglobin decrease, blood transfusion rate, perirenal fluid presence, post operative fever, stone clearance rate, and the need of a second operation. Meta-analyses were performed using fixed and random-effects models, which included tests for publication bias and heterogeneity.

UP.521, Figure 1.



UP.521, Figure 2.



Results: The patients whom underwent tubeless PCNL had shorter length of hospitalization, compared to standard PCNLs (mean difference -1.57, 95% confidence interval −3.2 to 0.07, p = 0.06). No significant decrease was detected in hemoglobin after tubeless PCNL compared to standard PCNL (mean difference 0.05, 95% confidence interval −0.03 to 0.13, p = 0.21). There were no significant differences in operation time (p=0.7), perirenal fluid presence (p=0.15), post operative fever (p=0.72), stone clearance (p=0.68), and the need of a second operation (p=0.90).

Conclusions: This study showed no significant difference between tubeless and standard PCNLs in children. However, due to the lack of data, the results should be mentioned prudently. Future randomized trials with more sample sizes and longer follow ups are warranted.

UP.522

Tubeless versus Standard Percutaneous Nephrolithotomy: A Meta-Analysis

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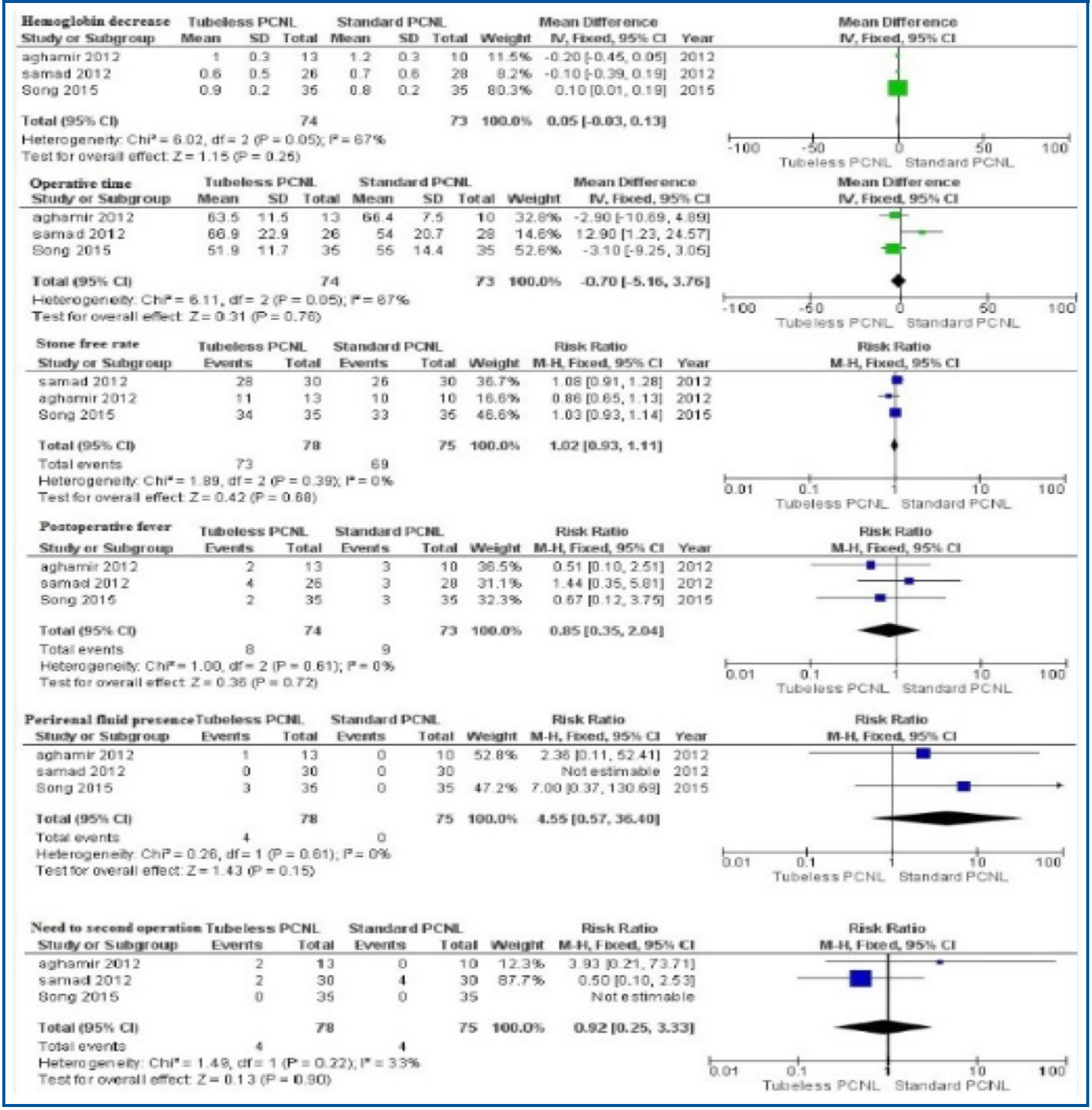
Introduction and Objective: To evaluate the efficacy and safety of tubeless percutaneous nephrolithotomy (PCNL) versus standard PCNL based on published randomized controlled trials.

Materials and Methods: We comprehensively searched PubMed, Embase, and the Cochrane Library in September 2016 for randomized controlled trials that assessed the efficacy and safety of tubeless PCNL versus standard PCNL in selected patients. The main outcomes were hospital stay, operative time, stone-free rate, hemoglobin decrease, postoperative analgesia, postoperative fever, postoperative pain score and urinary leakage. We did subgroup analyses to assess whether differences in patient and trial characteristics affected outcomes. The review manager 5.2 software was used.

Results: Seventeen randomized controlled trials were analysed. The pooled results revealed that tubeless PCNL techniques provided a significantly shorter hospital stay (weighted mean difference [WMD]: = -1.07; 95% confidence intervals (CI): -1.56, -0.59; P < 0.0001), lower postoperative analgesic requirement(WMD= -72.03; 95%CI: -88.08, -55.98; P < 0.00001), less postoperative pain(WMD= -0.80; 95%CI: -1.48 , -0.11; *P* = 0.02), and less urinary leakage [odds ratio(OR) =0.12; 95%CI: 0.02, 0.68; *P* = 0.02]. There was no significant difference in operative time (WMD= -2.48; 95%CI: -5.53, 0.57; P =0.11), hemoglobin decrease (WMD= 0.10; 95%CI: -0.11, 0.31; P =0.35), stone-free rate (OR = 1.29; 95%CI: 0.69, 2.41; *P* = 0.43), and postoperative fever (OR = 0.84; 95%CI: 0.26, 2.68; *P* = 0.77).

UP.521, Figure 3.



Conclusion: Tubeless PCNL is a safe and effective technique for non-complicated cases. It is associated with shorter hospital stay, lower analgesic requirements, less postoperative pain and lower risk of urinary leakage without increasing risk of postoperative fever and hemoglobin decrease. Regarding to these significant advantages, we recommend that tubeless PCNL could be chosen as a prior treatment for selected patients. However, further multi-center randomized controlled studies are needed to verify our result.

UP.523

Effect of Irrigation Solution Temperature on Postoperative Complication of Percutaneous Nephrolithotomy: A Prospective Randomized Double-Blind Study

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Introduction and Objective: Appropriate temperature for irrigation fluid would result in better surgical outcomes and decreased intra-operative complications such as bleeding, hypothermia, shivering, and hospital stay. Accordingly, in this study, the rates of complications in percutaneous nephrolithotomy were compared across three groups including those receiving solution with room temperature, warm fluid, and cold solution.

Materials and Methods: In this randomized clinical trial, 60 patients under percutaneous nephrolithotomy in Sina University Hospital were enrolled. The patients were randomly assigned in three groups according to simple random manner. The groups included three groups of room temperature fluid (24 degree), warm solution (37 degree), and cold fluid (20 degree) during nephroscopy. The rates of complications in were compared across three groups.

Results: Type of complications was same across the groups (P > 0.05). The hypothermia rate was higher in cold fluid group (P=0.018). However the initial core temperature was alike across the groups (P > 0.05); there was significant difference between groups for final temperature and alteration amount (P=0.001).

Conclusion: Totally, according to our study, it may be concluded that warm irrigation solution use during percutaneous nephrolithotomy would result in lower core temperature reduction and also lower rate of hypothermia. Hence use of warm irrigation fluid for this matter is recommended.

UP.524

Perirenal Hematoma after Ureteroscopy: A Systematic Review

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Introduction and Objective: With the broadening indications of ureteroscopy (URS) for complex stones and high-risk patients, more URS is being performed and hence there is an increasing risk of major potentially life-threatening complications. We wanted to define the incidence, predisposing factors, management, and long-term sequelae for post-URS perirenal hematoma (PRH).

Materials and Methods: We conducted a systematic review of literature according to Cochrane and preferred reporting items for systematic reviews and meta-analysis guidelines for all studies reporting on post-URS PRH from 1980 to September 2016. A literature search was conducted through PubMed, EMBASE, CINAHL, and Cochrane Library for all English language articles.

Results: Based on a literature search of 210 articles, seven studies (8929 patients) met the inclusion criteria with an incidence of post-URS PRH reported as 0.45% (40 patients, range: 0.15%-8.9% per study) with a mean age of 53 years and a mean stone size of 1.7 cm. The predisposing factors were moderate-severe hydronephrosis, thin renal cortex, prolonged operative duration, hypertension, and preoperative urinary tract infection (UTI). The management strategy varied from conservative management with blood transfusion and antibiotics (n = 22, 55%) to percutaneous drainage (n = 11, 27.5%). Surgical intervention was needed in seven (17.5%) patients. Two of these were emergency angiography of which one proceeded to open nephrectomy. Open surgery with clot removal was done in three patients, nephrostomy for severe hydronephrosis in one patient, and surgery to correct malpositioned stent in one patient. There was one mortality reported, wherein a patient who had postangiography nephrectomy died of multiple organ failure after the intervention.

Conclusion: URS related PRH is a rare, but potentially life threatening complication with a small risk of renal loss. Although most cases may be managed conservatively, incidence of PRH can be minimized by control of blood pressure, treatment of preoperative UTI, and reduction in intrarenal pressures and operative time duration.

UP.525

The Management of Distal Ureteral Stones Greater than 10mm in Size

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Introduction and Objective: Extracorporeal shock wave lithotripsy (ESWL) and semirigid ureteroscopy lithotripsy (URS) have become standards of treatment for ureteral calculi. The aim of this retrospective study was to compare ESWL vs. URS in terms of safety and efficacy for treatment of large distal ureteral stones ≥ 1cm and ≤1.5cm.

Materials and Methods: This investigation assessed, between January 2014 to December 2015, 87 patients with distal ureteral stones (10 to 15mm in size). 35 in the ESWL group were treated on an outpatient basis using the Medispec E3000 machine without anaesthesia. URS was performed in 52 patients with a 6-8 Fr semirigid ureterorenoscope and Holium laser under spinal anaesthesia. A successful outcome was defined as the patient being stone free 1 month after treatment. For all patients the parameters, including stone-free rate, operation time, complications, were inserted retrospectively in this study after review of medical records.

Results: The stone-free rate after URS was 96.1% and 62.8% after ESWL treatment (p < 0.001). The mean operative time between two groups was 62±9.2 min for URS group and 33.3±7.9 min for ESWL group. The average number of office visits was 4.3 and 3.6 in patients treated with ESWL and URS, respectively. Double J stents were inserted 25.7% and 92.3% of patients in ESWL and URS. Two patients needed rehospitalisations for major complications in URS group and one patient in ESWL group. However, the differences in the overall complication rate were not statistically significant, with a rate of 9.2% for URS and 8.5% for ESWL (p=0.32).

Conclusions: We have shown that URS has enough safety and efficacy for the treatment of distal ureteral stones ≥ 1cm. URS is associated with higher stone clearance rate as compared with ESWL.

UP.526

Endoscopic Therapy for Pediatric Stone Disease – Our Experience in More than 100 Cases

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Introduction and Objectives: Treatment approaches for urinary stones changed during the last years. Extracorporal shock wave lithotripsy (SWL) is more and more replaced by endoscopic procedures like ureteroscopy (URS) and percutaneous nephrolithotomy (PCNL). SWL is still recommended as first line treatment for children with ureteral stones. However, SWL is not promising for stones > 10 mm in diameter, for impacted stones, calcium oxalate monohydrate or cystine stones. In these selected cases ureteroscopy with smaller caliber instruments should be used. With regard to kidney stones the indications for PCNL are similar in adult and pediatric patients (stone diameter > 20mm).

Materials and Methods: Between 2009 and 2015 we successfully treated 114 children aged between 0 and 14 years (median 8.9 years) in our endourology department. All children were referred because of complex stone situations such as staghorn calculi, cystine stones, bilateral stones or obstructive ureteral stones. The stones were removed endoscopically either using ureteroscopy (URS 4.5 F or 6.5/8.5 F), mini-PCNL (mPCNL 15 F) or ultra-mini PCNL (UMP11/13 F) respectively.

Results: Endoscopic stone treatment (75x URS, 39x mPCNL/UMP) in children with stone disease, especially complex stones or stones resistant to SWL, is safe and effective. Primary stone-free rate of URS was 93%, of mPCNL/UMP 94%. Second look procedures or retreatment was required in 28.1%. The median stone size was 13.1mm for mPCNL/UMP (6mm - 25mm) and 6.2mm for URS (1mm - 15mm). The overall mean hospital stay for mPCNL/UMP was 8.0 days (2 – 19 days) and for URS 5.9 days (1 – 8 days). Complications and complication-rate was comparable to those in adults: three children developed fever (temperature >38.5°C), one child needed intensive care treatment for 3 days due to hyponatremic hypervolemia post-operatively. We did neither observe severe bleeding nor the need for transfusion after URS or PCNL.

Conclusions: Endoscopic stone therapy in pediatric patients should be recommended as first option in complex situations where SWL does not seem to be promising. Children should be referred to specialized stone centers, where special smaller sized scopes and armamentarium are available. Subsequent metabolic evaluation is essential.

UP.527

Management of Caliceal Diverticular Calculi: A 10-Year Experience of a Tertiary Centre

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Introduction and Objective: Caliceal diverticula (CD) are associated with stones in up to 40% of patients; nonetheless it is unclear whether the stones are caused by local anatomic obstruction or are due to underlying metabolic factors.

Nowadays, various available minimally invasive modalities offer the highest symptomatic relief and stone-free rates.

Materials and Methods: Descriptive analysis of patients submitted to treatment of caliceal diverticular calculi from 2006 to 2016.

Results: A cohort of 19 patients was studied, mostly female (63.2%), with mean age of 46 years and mean BMI of 25.7 Kg/m2. Most patients had previous interventions due to lithiasis (64.7%), mainly percutaneous nephrolithotomy (PCNL). CD were associated with pre-operative pain in 68.4%, recurrent UTI in 36.8%, and asymptomatic hematuria in 1 patient. Mean diverticula size was 24.6±9,3mm, with an average stone burden of 17.5±7.2mm. Twelve patients were treated with PCNL (63.2%), 75% of them in supine position. Access was made through the superior medium and inferior calix in five, five and two patients respectively. Ureterorrenoscopy (URS) was used to treat 31.6% of the patients and laparoscopy in one patient (complex, exophytic and anteriorly located caliceal diverticular calculi). Fulguration of the diverticula was performed in 47.4% of the patients, with infundibulotomy and dilation of the infundibula in 31.6%. Overall mean surgery time was 126.7 ±51.5min - mean PNL time of 134.4min and mean flexible URS time of 107.1 min and the average length of hospitalization was 2.7 ±1.7 days. Overall Stone free rate after 6 months was 57.9%, with no statistically significant difference between PNL and URS, p=0.31. Seventy-three percent of the patients treated required no further procedure to date (3 patients nedded a URS and 2 patients external shockwave lithotripsy).

Conclusion: There is scarce data in management of caliceal diverticular lithiasis and during the last decade there is a trend to minimally invasive procedures. In our department PCNL and URS are the most frequent procedures used to treat these patients. Laparoscopy is also an option in our cases but we just propose this approach in very selected patients.

UP.528

Safety and Efficacy of Percutaneous Management of Caliceal Diverticulum with Stones

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Introduction and Objective: Percutaneous management of stones in caliceal diverticulum is an established option for the management of caliceal diverticular with stones. It involves stone clearance and treatment of diverticular neck or cavity or both. We analysed different types of percutaneous methods for safety and efficacy in relation to stone clearance, diverticular obliteration and complications.

Materials and Methods: Fifty three patients had single stage PCNL. Single stage PCNL involved percutaneous nephrolithotomy with extraction of all stones and management of diverticular neck or cavity or both. Twenty seven of these patients (Gp1) had PCNL, with opening of diverticular neck by cold knife, laser or dilatation and putting of DJ stent with or without PCN tube. Eighteen patients (Gp2) had fulguration of cavity with drainage by PCN tube. Eight patients (Gp3) had PCNL with drainage by PCN tube and no treatment of diverticular neck or cavity. Symptomology, imaging modality, type of procedure, complications and follow-up with success and failures rates of different techniques were studied.

Results: Pain (90%) was the most common symptom. IVU was done in 20 cases and CT was done in 33 patients. Mean age was 43 years with 29 females and 24 males. Thirty patients had upper pole diverticulum followed by midpole in 15 and lower pole In percutaneous group (Gp3), two patients had secondary PCN and 1 had partial nephrectomy because of symptoms, and failure of cavity to collapse. Stone clearance was maximum in Gp1 and diverticular obliteration was in Gp 2. Post-operative follow-up was by Ultrasound and Xray KUB or CT scan. Out of 53 patients, 2 patients had pneumothorax, 3 patients had residual stones. Overall, stone free rate of 95% and cavity obliteration of 80% was achieved in percutaneous group.

Conclusions: Treatment of caliceal diverticulum involves management of stones and the cavity. Percutaneous management can achieve excellent stone free rate. Single stage PCNL followed by treatment of diverticular neck /cavity fetches good dividends in terms of stone clearance and diverticular cavity obliteration. Laser incision of diverticular neck with stenting after stone clearance is safest of three percutaneous types. Failures are more in patients with no treatment of wall and neck.

UP.529

Flexible Ureteroscopic Approach in Large Pyelocaliceal Lithiasis

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Introduction and Objectives: Following the technological progress, the indications of flexible ureteroscopy multiplied. The aim of our study was to evaluate the efficacy and safety of this procedure in single large pyelocaliceal lithiasis.

Materials and Methods: We retrospectively analysed the efficacy and morbidity associated with flexible ureteroscopic approach in 42 cases of single pyelocaliceal calculus with size between 2.5 and 3.5 cm. The success of the procedure was defined as presence of residual stone fragments of less than 3 mm.

Results: Patients required a single procedure in 16 cases, two procedures in 20 cases and three procedures in 6 cases. Complications rate was 19.1%, similar to the general one associated with flexible ureteroscopy in our experience. Clavien I and II occurred in 14.7% of cases, while Clavien III occurred in 4.4% of cases. No Clavien IV and V complications were registered.

Conclusions: Flexible ureteroscopy is a safe alternative to percutaneous access in large pyelocaliceal stones. Its efficacy is good, but the patient has to accept the probable need for additional procedures.

UP.528, Table 1.

	PCNL	Wall Fulguration	Laser Incision of Neck	Dilatation/ Cold Incision of Neck	Stenting	PCN Tube
Gp1	27	0	20	7	27	1
Gp2	18	18	0	0	0	18
Gp3	08	0	0	0	0	8

UP.530

Place of the Open Surgery in the Treatment of Staghorn Calculi in the Era of the Minimally Invasive Surgery

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Introduction and Objective: Staghorn calculus is a particular entity, wich represents a challenge for the urologist, because of its potential morbidity and the difficulty of treatment. The use of minimally invasive techniques in the treatment of staghorn calculus become more used than the open techniques in the past decades. In this study, we evaluate the results and complications of the open surgery versus percutaneous nephrolithotomy in the treatment of staghorn calculi.

Materials and Methods: This was a retrospective comparative study, between 2000 and early 2011 a total of 113 patients with 121 staghorn calculi. Patients and stone characteristics were noted. The two techniques were compared in term of operative and post operative complications, and the stone free rate.

Results: Groups were comparable regarding the immediate stone free rates at discharge home: 21.3% for PNCL versus 33.8% for open surgery (p=0,139). After additional ESWL stone free rate grew up to 84.2% versus 66% respectively. Intra operative complications in terms of bleeding requiring blood transfusion, pleural or renal pelvis injuries were recorded in 12 patients (25.5%) in the PCNL group and 24 (32.4%) in the open surgery group without significantly difference ($p > 0.05$). Post operative complications including acute pyelonephritis, urinary leakage and worsening of renal function were observed in 10 patients (21.3%) treated percutaneously versus 21 patients (28.4%) treated with open surgery. PCNL was associated with shorter hospital stay.

Conclusion: PCNL is a valuable treatment option for staghorn stones with a satisfying stone free rate. Open techniques stay an option that should be considered when treating patients with staghorn calculi.

UP.531

Applying European Association of Urology Kidney Urolithiasis Guidelines to Optimize Stone-Free Rates and Severe Treatment Complications in a Single Department

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Introduction and Objective: Urolithiasis treatment has been evolving in the last three decades. Extracorporeal shockwave lithotripsy (SWL), retrograde intra-renal surgery (RIRS) and percutaneous nephrolithotomy (PNL) are the most used techniques in the management of kidney stones. The European Association of Urology (EAU) guidelines recommends that kidney stones >2cm should be treated with PNL unless other contraindication. EAU also advises that PNL may be a surgical technique used to solve kidney lower pole calculi <2cm whenever other approaches are not feasible. SWL is preferably used for <2cm stones with favourable anatomic characteristics in the upper and middle calyx. RIRS is recommended for smaller stones (<2cm) which can't be solved with other techniques since severe complication (Clavien-Dindo grades III to V) and stone-free rates are less attractive than with the other techniques. Final decision should take in consideration stone-free probability, complication-associated rate and surgeon experience.

Materials and Methods: A retrospective study was performed to evaluate if the applicability of EAU guidelines in the management of kidney stones in a single urology department homogenizes stone-free rates (3mm) and complications associated to different techniques. The study evaluated all patients with radiopaque kidney lithiasis treated between June 2015 and June 2016 with at least 6 months follow-up in the same institution of calculi resolution.

Results: One hundred and fifty nine patients met the inclusion criteria. There was no statistical difference between groups regarding age and gender. All clinical cases were reviewed and all of them were treated according to EAU guidelines. Half of the patients were submitted to SWL. Medium stone size was 10,4mm for SWL, 12.4mm for RIRS and 30.7mm for PNL. Stone-free rates were 61.4% for SWL, 72% for RIRs and 77% for PNL without significant differences between groups (p>0.05). Only grade II Clavien-Dindo classification complications were identified during follow-up (19% of SWL, 10% of RIRS and 14% of PNL).

Conclusion: ESWL, RIRS and PNL were successful in treating renal lithiasis. The complication rates found are in line with the ones reported by the European Association of Urology guidelines.

UP.532

Our Experience with Percutaneous Nephrolithotomy in Patients with Single Kidney

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Introduction and Objective: Percutaneous nephrolithotomy (PCNL) was introduced in 1976, and rapidly evolved into the gold standard for treatment of nephrolithiasis and upper ureteral stones. The procedure continues to evolve with an emphasis on maintaining a high success rate of stone treatment while improving patient outcome with decreased morbidity. Single kidney individuals develop renal calculi just the same as people with two kidneys and PCNL in single kidney demands more meticulous technique. The aim of this study is to summarize our experiences in applying PCNL for treating patients with a single kidney and to determine short term renal functional results.

Materials and Methods: From January 2011 to Jules 2016 we investigated the results of treatment 21 patients with nephrolithiasis in single kidney or single functioning kidney. Mean age was 34, 5 years. Twelve patients were male and the 9 were female. Routine Laboratory tests, ultrasound and IVP were performed in all patients. Seven patients underwent a computerized tomography without contrast to evaluate stone burden and location, also location of adjacent organs.

Results: All patients were underwent PCNL: 7 patients with general anesthesia (endotracheal), 14 patients with spinal anesthesia. The operative time was calculated from the beginning of cystoscopy to the end of wound closure. The mean operation time was 65 ± 15.5 minutes. The complete stone free rate was 90.4%. DJ stent was inserted in12 patients. Most patients in this study received a single access tract. Two access tracks were needed in four cases with multiple stones. One patient had gross-hematurie a week after the operation who managed by rest and hydration. We need Reoperation (Re-PCNL) in two patients because of residual stones. Mortality, Pneumothorax and sepsis did not occur in these cases.

Conclusion: Our experience show that percutaneous nephrolithotomy is feasible, effective and safe option for nephrolitiasis in patients with single kidney, however, needs more attention to prevent even minimal complication.

UP.533

Bilateral Simultaneous Ureteroscopic (BS-URS) Seems to Be Related to the Case Volume and Is Getting Safer in the Modern Era

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Introduction and Objective: Ureteroscopic treatment of urolithiasis has become safer and more effective in the contemporary era. This has opened the possibility of simultaneous ureteroscopy for bilateral stones, thus avoiding the need for further procedures. This review evaluates the current evidence base for bilateral simultaneous ureteroscopy (BS-URS).

Materials and Methods: A systematic review was conducted using studies identified by a literature search between January 1990 and June 2016. All English language articles reporting on outcomes of BS-URS for urolithiasis were included. Two reviewers independently extracted the data from each study. Data was split into two periods: period 1: 2003-2012 and period 2: 2013-2016, and analyzed using SPSS version 24.

Results: A total of 11 studies (491 patients) were identified from a literature search of 148 studies with mean age of 45 years and a male: female ratio of 2:1. Mean operative time was 69 minutes (SD= ±15). The initial and final stone free rate (SFR) was 87% and 93% respectively. Post-operative stents were placed in 89% of patients with a mean hospital stay of 1.6 days (SD= ±0.5). Overall there was a significant negative association between case volume (procedures per month) and complication rate (p=0.045). Mean hospital stay was significantly longer in period 1 (1.9 days, SD= ±0.5) than period 2 (1.3 days, SD= ±0.3) and complications were also significantly higher in the period 1 (47%) compared to period 2 (12%) (p<0.001). There were 6 studies examining holmium laser (HL) lithotripsy and 3 examining pneumatic lithotripsy (PL). There were significantly more complications after PL than HL (54.9% vs. 16.7%, p=0.007) and a trend towards longer hospital stay (1.98 vs. 1.21, p=0.041). However, there was no difference in SFR between these two fragmentation modalities.

Conclusions: Simultaneous bilateral ureteroscopic treatment of urolithiasis is safe and effective in the contemporary era. Safety is increased in centers with increased number of procedures performed and with the use of laser lithotripsy.

UP.534

Bilateral Single Session Percutaneous Nephrolithotomy

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Introduction and Objective: Percutaneous nephrolithotomy (PCNL) is a surgical method used for extraction of the stones from the pelvis and kidney. Efficacy of bilateral PCNL is not proved yet, due to unsatisfied attitudes toward this method of surgery. Some authors believe that it has more complications, comparing with one side PCNL in each surgery course.

Materials and Methods: We included 39 patients with nephrolitiasis, who underwent bilateral PCNL between the years 2012 to 2013. All patients underwent PCNL. The other day after the surgery, A KUB is performed for all patients, to identify whereas he/she has got stone free or not, the outcomes of the surgery of all 39 patients are processed and analyzed with SPSS V.11.

Results: Among 39 which, 8 patients had remnant particles of renal stones, from which, in just 4 patients, the renal stones had clinical importance. The rate of getting stone free in this study after bilateral PCNL is 97.56%. The duration of hospitalization in this study was 2 days for the patients who underwent tubes PCNL and 1 day in the patients with tubeless PCNLs.

Conclusion: Bilateral PCNL is a surgical method with high success rate and results in less hospitalization and less costs. Our study showed that by bilateral PCNL more than 97% of patients get stone free, after just one surgery curse.

UP.535

The Evaluation of PCNL Results in Pediatric Renal Stones

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Introduction and Objective: Complex pediatric renal calculi as a management dilemma require deliberate plan to achieve higher clearance rates and reduce

complications. Over the time PCNL has been gradually replaced with ESWL in the management of pediatric stone disease, because of improvements in surgical techniques and instruments. We conducted the present series to evaluate the efficacy and complications of PCNL in pediatric renal calculi treatment Imam Reza hospital of Mashhad.

Materials and Methods: In this case series study, 52 pediatric patients, underwent PCNL with the diagnosis of renal calculi in the urology department of Imam Reza hospital of Mashhad. Demographic data, surgical details and postoperative complications and clearance rates were recorded and subsequently analyzed using SPSS statistical software.

Results: The mean age of all patients was 10±5.39 years. The mean stone diameter was 22.1±6.8 mm. Of 52 cases 26 were complex staghorn stones (50%), and 26 were simple stones. The stone-free rate at 3 months was 92.3% (48 cases); 4 patients required supplementary ESWL in order to be rendered stone free. All 52 PCNL were completed successfully with no intraoperative complications. Post-operative complications were encountered in 13 cases (25%) mainly including fever, hematuria, nausea, vomiting and abdominal pain.

Conclusion: Although PCNL is an invasive treatment, it can be used in pediatric stone disease as an effective and safe modality either as monotherapy or in combination with ESWL.

UP.536

Trend and Features of Testis Cancer in Iran during 2008-2010

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Introduction and Objective: To report the features of testis cancer in Iran during years 2008-2010 and compare it with reports from 2003.

Materials and Methods: All extracted specimens of the anatomical region of testis with diagnosis of cancer submitted from pathology departments of Iranian hospitals during 2008-2010 to the cancer registry at the Ministry of Health and Medical Education were investigated and appropriate data were extracted.

Results: One thousand and nineteen specimens of testis cancer were included in the analysis ensuing in a rate of 1.46 for the male population. Ninety percent of reported specimens were seminomas and non-seminomatous germ cell tumors (NSGCT). The numbers of reported cases of seminoma for each year were rather constant at 223, 230, and 225 for the years2008, 2009 and 2010 while the same rates were increasing for NSGCT and were 209, 272 and 301 respectively. The age peak in seminomas was one decade later in comparison with NSGCT: the highest reported frequency for seminomas was observed in age groups 30-39 years then 20-29 years and then 40-49 years while for NSGCT the highest reported frequency was for the age group 20-29, then 30-39 and then 40-49.

Conclusion: Compared to the 2003 rate of 1.05 for the standard male population of WHO, a moderate increase in incidence of testis cancer to 1.3 (for the same standard population) was observed during years 2008 to 2010.

UP.537

Testicular Germ Cell Tumour – Relation between Pathologic Factors and Disease Staging

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Introduction and Objective: Testicular tumours constitute 5% of urological tumours. They are pathologically classified in germ cell tumours (GCT) – subdivided in seminomatous (SGCT) and nonseminomatous (NSGCT), sex cord stromal tumours and nonspecific miscellaneous stromal tumours. According to the TNM classification of 2009, GCT can be categorized in stages 0, I, II and III, with impact on the prognosis. Cure is expectable in most cases, even in metastasized patients. The objective is to evaluate the impact of pathology data and initial staging of the disease on prognosis and overall survival of patients with GCT.

Materials and Methods: Retrospective analysis of the clinical files of patients with testicular tumours treated in a tertiary hospital centre between 01-Jan-2009 and 30-Jun-2015. Description of the characteristics of the patients, tumours, tumour marker kinetics and treatments undertaken (primary and secondary). Analysis of pathological risk factors (lymphovascular, rete testis or albugineal invasion, presence of necrosis or intraepithelial neoplasia, predominant pathological type and tumour size) and their relationship with initial staging. Comparison of the results with a similar series from 1989 to 2003. Statistical analysis with SPSS ®21.

Results: One hundred patients with testicular tumours were reviewed, with a mean follow-up of 35.3±24.6 months. Eighty-four were GCT (34 SGCT and 50 NSGCT), while the rest (16) were mainly lymphomas (13). Among SGCT, 29 were classified as stage I (85.3%), 3 as stage II (8.8%) and 2 as stage III (5.9%). Only 1 patient with stage III did not exhibit regression and died (mortality of 3.4%). All others are alive and recurrence-free. Regarding NSGCT, 27 (54.0%) were classified as stage I, 5 (10.0%) as stage II and 18 (36.0%) as stage III. There were no cases of recurrence, non-regression or death in stages I and II. There was no regression in 33.3% of stage III NSGCT, and there was recurrence of disease in 1 case (5.6%); these cases culminated in death (mortality of 38.9%). Of the pathological factors analysed, the presence of testicular necrosis is more commonly associated with advanced stages of disease (p=0.03). No other pathological factors (including pT of the TNM classification) were related with initial staging of GCT. There were no differences in recurrence (p=0.48) or mortality (p=0.07) between SGCT and NSGCT. The global recurrence and mortality rates of GCT were 1.2% and 9.8%, respectively. Regarding the last study of GCT in this department (1989-2003) it was found that currently, more patients are diagnosed in stage I (46.3% vs 56.0%) and that mortality is far lower (19.5% vs 9.8%).

Conclusion: The presence of necrosis in the pathological exam is more common in GCT stages II-III. The prognosis of NSGCT is worse than SGCT, although without statistical significance in this series. Globally, the prognosis of GCT is favourable.

UP.538

Serum Soluble Interleukin-2 Receptor Is a Biomarker for Testicular Seminoma

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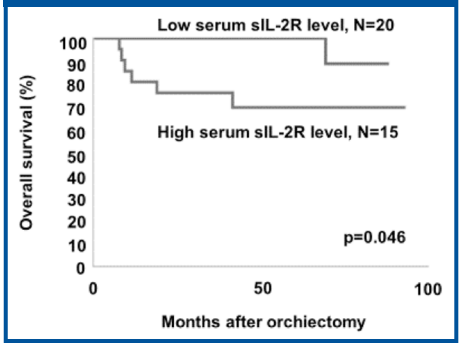
Introduction and Objective: We examined the utility of serum soluble interleukin-2 receptor (sIL-2R) as a serum biomarker for seminomas.

Materials and Methods: We analyzed 39 patients in whom pure seminoma was diagnosed histopathologically at the Tokyo Metropolitan Tama Medical Center between 2008 and 2015. We measured lactate dehydrogenase (LDH) and sIL-2R before and after orchiectomy and chemotherapy, and evaluated the utility in these serum biomarkers.Overall survival (OS) were evaluated using multivariate Cox proportional hazards regression models to assess the correlation with serum sIL-2R level. The Cox proportional hazards regression model was used to assess the correlation of overall survival (OS) with sIL-2R level.

Results: The median serum sIL-2R and LDH level of all patients was 551 (231-4981) U/L and 277 (142-2846) U/mL, respectively. The elevation of serum sIL-2R and LDH was detected in 57% and 57% of pure seminoma patients, respectively. The use of a combination of sIL-2R and LDH improved detection efficiency to 71%. Serum sIL-2R decreased after surgical debulking of the tumor in patients with initially elevated levels.The sIL-2R elevation was significantly associated with poor survival for OS (logrank test, p = 0.046).Multivariate analysis showed that the elevation of serum sIL-2R level was an independent prognostic factor for overall survival (p = 0.042). An increase in sIL-2R was also significantly associated with poor OS (log-rank test, p = 0.046). Multivariate analysis showed that the elevation of the sIL-2R level was an independent prognostic factor for OS (p = 0.042).

Conclusion: The sIL-2R level demonstrated high utility for monitoring the treatment effect, particularly

UP.538, Figure 1.



during chemotherapy and in follow-up surveillance, in pure seminoma cases, suggesting strongly that it could be useful in the clinical management of this disease.

UP.539

What Do Young Adults Know about the Risk of Urological Disease in Smokers?

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Introduction and Objective: Smoking is the greatest cause of preventable death worldwide, and an established cause of bladder cancer (BC), renal cancer (RC) and erectile dysfunction (ED). Of smokers, 89% start before the age of 18. Knowledge of all (not just selective) smoking risks is required to make an informed decision not to smoke in this age group (16-18 year olds); a cohort which has not been surveyed previously. The objective was to assess adolescents' (16-18 years) knowledge about the risk of urological disease in smokers, in order to inform health promotion and aid reductions in tobacco use.

Materials and Methods: A total of 1009 sixth-form students studying within 23 miles of Southampton were surveyed with anonymised questionnaires. These assessed demographics, smoking characteristics and knowledge of smoking association with 23 diseases, four of which, were urological. The understanding that smoking causes lung cancer was compared to that of BC, RC and ED using one-sample t tests. Chi-squared tests and logistic regression were used to determine whether participant characteristics affected their knowledge.

Results: In this population, 98.2% correctly identified that smoking causes lung cancer, significantly higher than that for BC (27.7%), RC (42.2%) or ED (36.3%). Knowledge of an ED-smoking link was higher in smokers (44.4%: 34.9%, difference 9.5% [95% CI 0.9%,18.3% p=0.030]), and in males (41.3%: 31.9%, difference 9.5% [95% CI 3.3%,15.6% p=0.003]). This may be due, in part, to public health warnings on cigarette packaging and the fact that it is a disease with emotional resonance for young men.

Conclusion: Many participants are unaware of the link between smoking and urological disease. Young adults need to be informed about the risks of developing smoking related urological pathology. Education on smoking associated urological disease risk may be an important tool in reducing smoking prevalence. However, education alone will not be enough. 98% of the sample knew that smoking causes lung cancer and still 15% smoke. Other approaches to influence adolescents not to smoke must also be employed.

UP.540

Validation of a Robot-Assited Radical Prostatectomy Module for the RobotiX Mentor Surgical Simulator

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Introduction and Objectives: Basic virtual reality (VR) simulation training is an effective method of robotic surgical skills training. Novel VR full procedural training tools require rigorous assessment prior to incorporation into surgical training programmes. We have performed the first validation of full procedural VR training module and analysis of novice learning curves.

Materials and Methods: Thirteen novice, 24 intermediate and 8 expert surgeons completed the validation study. Bladder neck dissection (BND) and urethrovesical anastomosis (UVA) tasks were completed as part of the prostatectomy training module. Surgeons completed feedback questionnaires assessing the realism, educational impact, acceptability and feasibility of the VR prostatectomy module. All novice surgeons completed a 5.5-hour training programme.

Results: Surgeons scored the realism for BDN (mean 3.4/5) and UVA (3.74/5) and the importance of BDN (4.32/5) and UVA (4.6/5) for training highly for this procedural module. It was rated a feasible (3.95/5) and acceptable (4/5) tool for training. Experts performed significantly better than novice group in 6 metrics in the UVA including time (p=0.0005), distance by camera (p=0.0010) and instrument collisions (p=0.0033) as well as task specific metrics such as number of unnecessary needle piercing points (p=0.0463). In novice surgeons, a significant improvement in performance after training was seen for BND in time (p<0.0001), instrument collisions (p=0.0013), total time instruments are out of view (p=0.0137), number of movements of left instrument (p=0.0003) and right instrument (0.0003). In UVA, a significant improvement was seen in many metrics including time (p=0.0135), instrument collisions (0.0066) and task specific metrics such as injury to the urethra (p=0.0032) and bladder (p=0.0189).

Conclusion: Surgeons believe this module is realistic and important for surgical training and is both feasible and acceptable to be incorporated into a surgical training program. Construct validity was proven between experts and novice. Novice surgeons have shown a significant learning curve over 5.5 hours of training, suggesting this module could be used in a surgical curriculum for acquisition of technical skills. Further implementation of this module into the curriculum and continued analysis would be beneficial to gauge how this module can be fully utilised.

UP.541

A Systematic Review of Procedural Virtual Reality Simulation

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Introduction and Objective: Basic virtual reality (VR) simulation training is an effective method of robotic surgical skills training. The effects of procedural VR has not been investigated to the same extent. The purpose of this systematic review was to establish the effectiveness of procedural virtual reality (VR) training compared to other types of simulation.

Materials and Methods: A review was conducted of articles investigating procedural virtual reality against a control or another type of simulation with a measured outcome. Articles published until January 2017 were considered. Ovid was used to search EMBASE, MEDLINE and PsycINFO databases. Cochrane Central Register of Control Trials databases was also searched along with the Clinical Trials Database (US) and Meta Register of Controlled Trials.

Results: This review included 20 relevant studies which reported on procedural VR training in various specialities. Six studies assessed the outcome of procedural VR training on a VR simulator, 6 using a porcine model, 1 using fresh frozen cadavers and virtual reality, 5 in the operating room (OR) with real patients and 2 in the OR using models. A statistically significant improvement was seen when comparing procedural VR training groups against a control in 2 studies when assessed in VR, 2 studies when assessed in porcine models and in 4 studies when assessed with live patients in the OR. A number of articles reported that no difference was found between procedural VR training and other modes of simulation training. Some types of simulation were found to be more effective than procedural VR training.

Conclusions: Procedural VR training allows surgical trainee to develop key surgical skills and is an effective training tool. Procedural VR training may be more effective for trainees who have already acquired basic surgical skills from another method of simulation. Additional studies investigating both basic and procedural VR simulation may produce evidence for what level of surgeon will gain the most from procedural VR training. It will also provide evidence for incorporation of procedural VR simulation in surgical curriculums.

UP.542

The Uptake of Technology and Social Media among West African Surgeons

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Introduction and Objective: The use of technology, including Social media(SM) among physicians has been reported widely. Most of the usage is for personal reasons and at conferences. There is paucity of such reports in the West African sub-region. This study will help us understand how surgeons (physicians) in this sub-region perceive and use technology and SM .

Materials and Methods: Paper questionnaire survey was administered to consenting attendees at the 2015 WACS 55 Congress in Abidjan, Ivory Coast. Questionnaire was in English (100) and French (100). Data were compiled in aggregate protecting the confidentiality of our respondents. Data will be stored for one year. Data analysis was by Excel soft ware Ethics approval was from the Ethics Review Board of the Lagos University Teaching Hospital, Nigeria.

Results: Out of 200, 74 (37%) questionnaires fully completed were from: Nigeria (60.8%); Cote D'Ivoire

(20.3%); Benin Rep (5.4%); Mali (2.7%); Ghana, Senegal & Sierra Leone (1.4%) each and Non-identified location (6.8%).45% were men; 31.5% women and 13.5% no response. Use of social media for personal reasons was more prevalent than for professional work. Use of various types of cell phones, daily internet use, texting. Email and various apps was common. Attitudes on the use of social media in health care,'friending patients' were varied Most physicians were not aware of any guidelines and/or legislation regarding online practices and privacy issues. Most physicians reported great value of SM during conferences. Overall, physician engagement in the social media services was 82.4% while 17.6% do not use them at all. More than 75% had computer, internet and cellular phone for their office practice. Fax machines, land phone lines, telemedicine and electronic health records (EHR) were rare <2%.

Conclusion: The uptake of technology and social media is prevalent and bound to grow. Judicious adoption of technology and SM among physicians may result in strengthening the quality of health care in West Africa. Workshops and Development of Guidelines among physicians are recommended. Future efforts will focus on Urology and subspecialty surveys and increasing participation by the French speaking physicians.

UP.543

Comprehensive Cancer Centre: A Misnomer in Australia?

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Introduction and Objectives: Cancer is a major public health issue world-wide and Australia is no exception. The Australian Institute of Health and Welfare in 2014 predicted 126800 new cancer cases would be diagnosed in 2015 (69790 males, 57010 females) with 47570 projected deaths (26470 males, 20100 females) and a 5 year survival rate of 67%1. The management of cancer patients often requires a multi-disciplinary approach and multiple therapies. Thus, North America and Europe have established the so called "Cancer Centres" dedicated to the fight against cancer.

Materials and Methods: We did a literature and internet search looking at the various accreditation criteria for comprehensive cancer centres across the world.

Results: We found three types of systems in the designation of cancer centres. 1) Quantitative questionnaire: as shown by the OECI; 2) Bottom-up system: performed by professional for professionals as seen in the Netherlands; 3) Top down system: performed by the joint Commission, as seen in the designation of cancer centres in the USA. A move towards accreditation is critical since the terms "cancer centre" or "comprehensive cancer centre" are not copyright protected thus any organization can call itself a "cancer centre" or "comprehensive cancer centre."3 Apart from the Victorian Comprehensive Cancer Centre (VCCC) in Victoria, the Chris O'Brien Lifehouse and Nelune Comprehensive Cancer Centre in New South Wales, we found atleast 5 centres across Australia that call themselves "comprehensive cancer centre". However, there are vast differences in what services are provided by these centres.

Conclusions: Australia should follow suit from the examples set in Europe and the USA in having an accreditation system to define cancer centres. As seen abroad, accreditation has benefits of standardizing the cancer care, improving access to best practice treatment and establishment of an active experience and information sharing process.

UP.544

The Use of Antidepressive Drugs in Urology - A Review

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Introduction and Objective: Various classes of antidepressive drugs (AD) are known nowadays. So many distinct chemical components demand the knowledge of different pharmacokinetics, drug interactions and side effects. In their daily practice, urologists are faced with many pathologies that require treatment with AD, imposing the need to know how to deal correctly with these drugs.

We intend to review the available literature on the use of AD in urologic pathology as well as their potential urological side effects.

Materials and Methods: A search using MEDLINE and PubMed (english-language reports) with the key MESH terms: antidepressant drugs AND interstitial cystitis; urinary incontinence; premature ejaculation; chronic pain; adverse effects.

Results: The classes of antidepressants most commonly used by urologists are selective serotonin reuptake inhibitors (SSRIs) and serotonin and norepinephrine reuptake inhibitors (SNRIs). Premature ejaculation is the urological disease with more proven benefits with AD. However, the use of AD as analgesics has acquired a place of appeal in the treatment of interstitial cystitis and chronic pelvic pain, by producing analgesia at supraspinal, spinal and peripheral sites. SSRIs and tricyclic antidepressants (TCAs) are the AD most studied as analgesics. The wide range of adverse effects of these drugs can be intelligently used to treat some specific diseases (eg premature ejaculation), but we have to keep in mind that they can have deleterious effects at the urological level: gynecomastia, priapism, sexual dysfunction (erectile dysfunction, retrograde ejaculation or anejaculation, decreased libido), urinary incontinence and changes in seminal parameters and fertility. Last but not least, one should not forget the implications of using AD in a particular population - the elderly urological patients.

Conclusions: AD are complex drugs. They exert a multiplicity of pharmacological actions that can be used to treat other diseases than depression. Their role in urological diseases is well established, however their importance in pain treatment is becoming a useful weapon. The smart use of their side effects to treat specific diseases should be well balanced with the harmful effects at urological level and which the doctor should always keep in mind.

UP.545

Validation of Two Prognostic Models for Nonmetastatic Urothelial Tract Urinary Cancer (Utuc) after Curative Treatment in a Mediterranean Caucasian Population

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Introduction and Objective: To determine the applicability of two prognostic models to predict disease recurrence-free survival (RFS) and cancer-specific survival (CSS) after surgical managment in nonmetastatic UTUC in a Mediterranean Caucasian population.

Materials and Methods: We retrospectively reviewed the clinical and pathological variables of 180 patients treated with surgical managment (nephroureterectomy or segmentary ureterectomy) for UTUC. Two models were used to predict CSS (Cha nomogram and Yates model), and Cha´s nomogram to predict RFS. Survival was estimated using the Kaplan-Meier method. The predictive ability of the different scores was evaluated using the Harrell concordance index.

Results: With a median follow-up of 51.9 months, 46 patients (25.6%) died of UTUC and in 45 (25%) the disease progressed. The 5-years CSS and RFS rates were 83.9% and 76.1%, respectively. Among the features included in the models, pathological T (pT) stage, tumor size in surgical specimen, tumoral grade, lymphovascular infiltration and nodes stage (N) were significantly associated with RFS and CSS on univariate analysis. The pT stage and tumor size also influenced in the multivariate analysis. The c-index for RFS at 5 years was 0.808 for the Cha´s nomogram. The c-indexes for CSS were 0.706 at 5 years for the Cha´s model and 0.711 at 5 years for the Yates´ model.

Conclusion: The current prognostic models are therefore validated in the Mediterranean Caucasian population with nonmetastatic UTUC treated by surgery. Instead of the inclusion of ureterectomys, we obtain high accuracy for both models. Yates´ nomogram was found to be more accurate to predict CSS. The most influential features in our population, both in RFS and CSS, were tumor size and pT stage.

UP.546

Orthotopic Animal Model of Renal Pelvic Cancer Using Theimmunodeficiency Mouse

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Introduction and Objective: We have proposed an easy and simple method to generate orthotopic renal pelvic cancer model using a human bladder urothelial cancer cell line, UM-UC-3, and the severe combined immunodeficiency mouse (SCID).

Materials and Methods: Under the anesthesia by isoflurane, 24-gauge angiocatheters were indwelled in the bladder cavity of SCID mice. Intravesical instillation of 0.2% aqueous silver nitrate for 15 seconds and 0.25% trypsin solution for 10 min was performed to damage the bladder urothelium, allowing the induction of vesicouteral reflux. Then, 2 x 106 cells/200 mL of UM-UC-3 cells were injected into the bladder of mice, followed by urethral occlusion with a purse string suture for 3 hours. The average bladder capacity of mice is thought to be 50-100 mL. Intravesical instillation of 200 mL cell suspension could facilitate cancer cells to flow upstream to the renal pelvis.

Results: Four weeks after the cell instillation, the mice were euthanized and submitted to autopsy. Representatively, one of mice had a huge tumor in the left kidney and a small tumor in the right. Incision along the long axis of the kidneys revealed that most of left kidney was involved in tumor growth and approximately 50% of right kidney was affected. The kidneys were fixed in 10% formaldehyde solution and examined by hematoxylin-eosin staining. There were cancer cells which reached and attached to the urothelium of renal pelvis. Lymphovascular invasion was observed in the section. Non-papillary architecture was main growth pattern of this model. In some sections, there was cancer invasion front which invades the renal parenchyma. Detailed pathological examination showed four out of five mice (80%) developed renal pelvic tumors. One of two small tumors in each bladder was observed whereas no lymph-node involvement and lung metastasis was observed in the mice.

Conclusion: This mouse may be a promising orthotopic models for aggressive renal pelvic cancer characterized by invasion to the renal parenchyma and lymphovasclualr involvement. Our findings could be a relevant evolution on experimental animal model for upper urinary tract cancer research field.

UP.547

Predictive Factors of Bladder Recurrence after Radical Nephroureterectomy for Treatment of Upper Urinary Tract Urothelial Cell Carcinoma

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Introduction and Objective: There is a high rate of bladder recurrence (BR) of upper urinary tract urothelial cell carcinoma (UUTUCC) after radical nephroureterectomy (RN). The study of risk factors for BR still raises a lot of controversy. We intend to identify possible risk factors for BR development in patients undergoing RN for UUTUCC.

Materials and Methods: We selected 82 patients who underwent RN for treatment of UUTUCC between January/2010 and June/2016 in a tertiary hospital. We evaluated demographics of patients (age, gender), treatment characteristics (surgical technique, type of distal ureter resection, surgical margins, adjuvant chemotherapy) and factors related to the tumor (laterality, location, dimensions, multifocality, histological grade, pT stage, concurrent carcinoma in situ (CIS), synchronous BT, associated hydronephrosis). We studied the impact of these factors on BR through univariate and multivariate statistical analysis - SPSS, 21.0.

Results: Of the selected 82 patients, 61.0% were male. The average age was 73.7 years. The most frequent location of the UUTUCC was in renal pelvis (70.7%). RN was laparoscopic in most cases (69.5%). The most common types of distal ureter resection were endoscopic resection (42.7%) and bladder cuff excision (35.4%). Histological grade 2 (46.3%) and stage pT3 (46.3%) were the most often found. The presence of concomitant CIS was found in 18 cases (22.0%). The overall mortality was 48.8% with an average follow-up of 19.2 months. A total of 16 patients (19.5%) developed BR after a median interval of 12 months. All cases of BR occurred within the first 3 years of follow-up. There was only 1 muscle-invasive BR. In 5 cases there was a second BR. With regard to BR prognostic factors, only the presence of CIS in the surgical specimen presented a positive relationship (p=0.028). The absence of hydronephrosis showed a negative relationship with BR (p <0.001). Multivariate analysis confirmed that only the presence of concomitant CIS was an independent predictor of BR (OR=9.7; p=0.024).

Conslusion: BR of UUTUCC occurs early after RN (first 3 years), arising in 20% of cases. The presence of CIS in RN specimen is independently associated with a risk about 10 times higher of BR.

UP.548

Objective Response of Lymph Node Metastasis in Upper Urinary Tract Urothelial Carcinoma by Multi-Modality Treatment: A Case Report

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Introduction and Objective: The 5-year survival rates of patients with pT3-4 or N1-3 upper urinary tract urothelial carcinoma (UUT-UC) is extremely poor (<5%). Here we experienced that an intriguing case of advanced UUT-UC with lymph node (LN) metastasis (pT3N2) has been provided radiographic complete response by salvage radiotherapy following radical nephroureterectomy (RNU) and perioperative chemotherapy. The purpose of our study is to statistically evaluate the difference of the effect with each treatment for LN metastasis.

Materials and Methods: The case was diagnosed as left UUT-UC with only obturator LN metastasis (cT2N1M0, but pT3N2 after surgery), however, four LNs metastasis (obturator, common iliac, and two para-aorta LNs [#1 and #2]) were mainly appeared during treatment. The treatment efficacy was evaluated by computed tomography, in which the size of LNs were retrospectively measured by four physicians and compared by statistical analysis (Student's t-test). The p value below 0.05 was considered to be significant.

Results: The obturator LN metastasis in UTUC achieved a complete response to perioperative chemotherapy (gemcitabine and cisplatin) and RNU with regional LN dissection. However, after the surgery immediately, the common iliac and two para-aorta LNs (#1 and #2) significantly enlarged. Second-line chemotherapy using gemcitabine and paclitaxel in our policy provided the significant decreased size of the common iliac and para-aorta #1 LNs, whereas the para-aorta #2 LN unfortunately grew. Finally, aggressive external beam radiotherapy (total irradiation dose, 60 Gy in 30 fractions) was performed for retroperitoneal LN region as consolidative therapy (standard dose, 40 Gy) as well as for the para-aorta LN region as salvage therapy (boost dose, 20 Gy). The common iliac and para-aorta #1 LNs as well as the obturator LN were reducing, and surprisingly the para-aorta #2 LN significantly shrunk to the normal size (21.5 to 5.4 mm). Consequently, he has long disease free survival without severe complications due to multi-modality therapies for about 5 years.

Conclusion: Our case suggested that the effectual combination of multi-modality treatment including salvage radiotherapy might provide maximum objective response for limited cases with LN metastatic UUT-UC.

UP.549

Laparoscopic vs Robotic Nephroureterectomy: Is it Time to Re-Establish the Standard? Evidence from a Systematic Review

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Introduction and Objective: Laparoscopic nephroureterectomy (LNU) has become the standard management for upper urothelial tumours, yet remains a challenging procedure due to management of the distal ureter. The increased dexterity afforded by robot-assistance may improve perioperative and oncological outcomes. This systematic review summarises the available evidence comparing these techniques.

Materials and Methods: Medline, EMBASE and the Cochrane Library were searched with relevant MeSH terms according to the PRISMA guidelines to identify all studies reporting on both LNU and robot-assisted nephroureterectomy (RANU) for upper urothelial tract tumours.

Results: Four studies met the inclusion criteria; including two cohort studies, one matched-comparison study and a population based study. A total of 1630 patients were included, of which 838 were LNU and 792 were RANU. Operative time was found increased in LNU, but may be attributed to a learning curve effect. Estimated blood loss was increased in RANU in some studies but decreased in others. Lymph node dissection was more successful in RANU in terms of median node count. Positive surgical margins, bladder recurrence, local recurrence and distant metastases were not significantly different between the two techniques. While two studies showed a trend towards improved overall mortality and cancer-specific survival in LNU, this was not significant. The only study to report on in-hospital mortality found it significantly increased in LNU (1.4% vs 0.0%, p=0.002). Overall complication rates were statistically lower in

the robotic groups (12.5%) as opposed to the laparoscopic group (18.8%) (p=0.0007).

Conclusion: This review suggests these techniques are are equivocal in terms of perioperative and oncological performance. Furthermore there may be a lower overall complication rate as well as postoperative mortality in the robotic group. Further research in the form of a RCT is warranted.

UP.550

Our Experience with the Rackley Continent Neo-Urachus for Urinary Diversion

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Introduction and Objective: Patients with acontractile bladders are often dependent on intermittent catheterization to empty their bladders completely. In female patients, self-catheterization through a continent cutaneous access other than the native urethra is deemed easier and safer. We present our experience with the "continent neo-urachus" channel as described by Rackley, demonstrating the procedure in a step-by-step manner.

Materials and Methods: Between April 2006 and February 2017, 11 patients (8 females and 3 males), aged 55 to 74 years (mean 66.4) underwent the continent neo-urachus procedure. All patients had severely hypocontractile or acontractile bladders. Neurologic causes were: diabetic peripheral neuropathy in 2, multiple sclerosis in 2, iatrogenic pelvic nerve injury in 3, spinal cord injury in 3, and idiopathic in 1. The continent neo-urachus channel was formed by making a skin tube from an in-situ abdominal skin flap over an 18F catheter extending from the umbilicus to the bladder dome. Prior to attaching the skin tube to the bladder dome, the sphincter mechanism is created by braiding the most medial fibers of both rectus muscles for formation of an external compressive continence mechanism. The skin stoma is anastomosed to the umbilicus. The bladder neck was closed transvaginally in 4 women due to leakage per urethra pre-operatively. The indwelling catheter was kept in place for 6 weeks. Recently, we have shifted from a skin flap tube to harvesting a 10-cm long ileal segment through a 5-cm longitudinal abdominal incision as the catheterizable channel in 1 man due to problems with hair growth, incrustrations and smelly discharge from the skin tube.

Results: The procedure was performed under spinal anesthesia in 7 patients and general in 4. Three patients developed swelling and serous discharge from the wound that healed after approximately 2 weeks with conservative medical treatment. The healing process occurred uneventfully in the remaining 8 patients. Although all patients were initially able to perform CISC, 3 ended up with permanent indwelling suprapubic tube due to catheterization problems.

Conclusion: The continent neo-urachus channel is a feasible, simple, surgical alternative to urethral self-catheterization in well selected patients due to its easier abdominal access. The complication rate is low and the inconveniences of an intra-abdominal bowel operation are avoided.

UP.551

Sexual Function Post Ileal Conduit Versus Neobladder: Results from the Bladder Cancer Australia's Patient Led Online Survey

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Introduction and Objectives: The effects on erectile and sexual function post radical cystectomy with urinary diversion should be considered carefully, as it carries significant psychosocial burden. We aimed to assess the effects on sexual and erectile function between ileal conduit diversion (ICD) and neobladder (NB) patient groups in Australia.

Materials and Methods: The postoperative results were evaluated from the Bladder Cancer Australia's patient-led online survey from December 2014 and March 2017. The ICD (n = 51) and NB (n = 132) results were assessed for its effect on erections, ability to orgasm and overall sex life.

Results: Postoperatively, erectile and sexual domains declined significantly irrespective of diversion choice. In both cohorts, majority of respondents reported complete impotence involving 69/121 of the NB cohort (57%) and 27/38 from the ICD group (71%). A small improvement was reported in the setting of drugs or other adjuncts, with 7% of NB patients experiencing some form of improvement in their erections, and 8% in the ICD group. Although there were significant rates of impotence, sexual pleasure was relatively well maintained. Orgasms related to ICD yielded a median [range] score of 3 [0-4], which was marginally greater compared to NB median score of 2 [0-4]. Despite this, 24/51 ICD patients (47%) reported no sex life, compared with 49/132 patients from the NB group (37%).

Conclusion: As expected, both ICD and NB have detrimental effects on complete impotence and maintenance of erection. This therefore reinforces the importance of discussing with patients the impact of both NB and ICD on sexual wellbeing as to make an informed decision. Further statistical analysis with greater numbers should be undertaken within these two groups to further this study.

UP.552

Mitrofanoff as Bladder Draining Tool - A Single Center Experience in Pediatric Patients

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Introduction and Objective: Mitrofinoff procedure is commonly employed as bladder draining tool in patients who are unable to do clean intermittent self catheterization through native urethera .It preserves renal function in small capacity and high pressure bladders and to improve quality of life.Here we want to share our single centre experience of patients undergoing Mitroffinoff procedure.

Materials and Methods: A retrospective study of 38 patients who underwent Mitrofanoff procedure from January 2009 till December 2015 with a median age range =5 to 16 years. Twenty eight patients were males while 10 female. Indications for catheterizable stoma formation included neurogenic bladder in 26 patients, small bladder in 11 and Urethral stricture in one. Median follow up was 1 year to 5 years. Stoma was made from Appendix in 32 cases, from tapered ileum in 4 cases and from ureter in 2 cases. Stoma location was lower Right quadrant in 30 cases, Left lower quadrant in 4 cases and at umbilicus in 4 cases. Augmentation accompanied by Mitrofanoff was done in 22 patients while Mitrofanoff alone was done in 16 patients. Augmentation was done by using ileum in 20 patients and cecum in one and illeocecum in one patient.Data was entered from chart review and analyzed on spss 16.Patients were analyzed in terms of complications and stoma revision.

Results: Post operative complications included UTI in 10(26.3%)patients, stones formed in 2(5.26%) , Fistula was seen in 1(2.63%) patient (Augmentation Cystoplasty+ Mitrofanoff), Stoma Stenos was seen in 3(7.89%) ,Stoma revision done in 2(5.26%). One female (2.6%) patient had dribbling urine through urethera (incontinence), she underwent bladder neck closure. Metabolic complications were not seen based on Serum electrolytes follow up records. Quality of life was improved in all children except one female child who had incontinence and underwent bladder neck closure. She had undergone depression which relieved after gaining continence.

Conclusion: We concluded that after Mitrofanoff procedure Renal function was preserved in most of the patients with no metabolic complications in cases of concomitant Bladder Augmentation. Quality of patients was improved after Mitrofanoff procedure.

UP.553

Evaluation of Continence Following Open Radical Cystectomy and Orthotopic Urinary Diversion and the Effect of Pelvic Floor Physical Therapy

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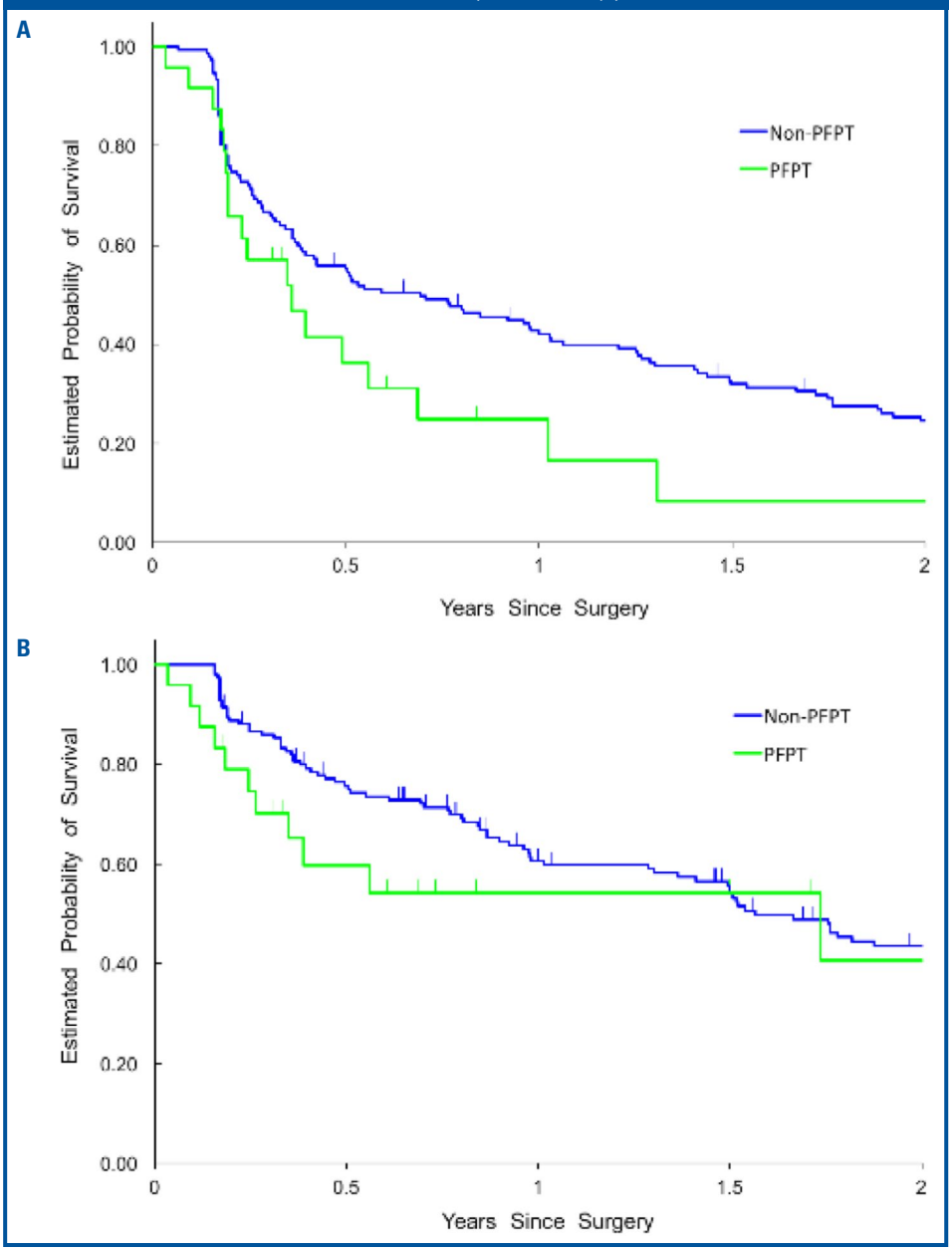
Introduction and Objective: We evaluated the continence outcomes in patients undergoing orthotopic neobladder (ONB) diversion following radical cystectomy (RC) using validated pad usage questionnaires and in a subgroup who underwent pelvic floor physical therapy (PFPT).

Materials and Methods: Using our IRB approved database, we identified 1269 patients that underwent open RC from 2002 to 2016. ONB was constructed in 935 (74%) patients, of whom 798 (85%) were male. Beginning in 2012, patients were prospectively followed, completing a validated, pictorial pad usage questionnaire, assessing the number, size, and wetness of pads, as well as catheter use, at follow up visits. Continence was defined as no pad usage, or pads as "almost dry." A subgroup of patients received PFPT as an intervention to assist their continence. Interventions focused on improving pelvic floor muscle strength, endurance and coordination with functional activities that provoked leaks. Manual (internal and external), visual and surface EMG biofeedback training were incorporated into the treatment, with goals to improve neuromuscular re-education of the pelvic floor. Frequency of visits varied from 1x/week to 2x/month at 1 hour sessions over 4-6 sessions, with reduction in visit frequency to 1-2 time/month post-6 weeks. Patients were also educated in behavioral modifications for bladder re-training, timed voiding and general bladder and bowel health.

Results: A total of 175 male patients with available pad usage questionnaires were followed with median age of 67 years and median BMI of 27 kg/m2. Daytime continence rates increase from 59% at <3 months to 92% by 12-18 months postoperatively. Nighttime continence rates increase from 28% at <3 months to 51% by 18-36 months postoperatively. Overall catheterization rate was 13%. 24 patients underwent PFPT during this period, with a median age of 71 yrs. There was no significant difference between groups for age, BMI, or Charlson comorbidity index. Univariate analysis showed there is a significantly shorter median time to first daytime continence in PFPT group compared to non-intervention group (131 days vs 253 days respectively; p=0.03). Kaplan-Meier curves also showed significantly higher daytime continence rates in PFPT group at one year compared to non-PFPT ones (0.75±0.09 vs. 0.58±0.04; p=0.03). Cox regression model showed PFPT patients were 1.6 times more likely to gain daytime continence by one year. There was no significant difference in one-year nighttime continence rates between the groups (0.45±0.1 vs. 0.39±0.04; p=0.26) (figure 1).

UP.553, Figure 1. Kaplan Meier Curves for Daytime (A) and Nighttime (B) Continence in Patients with and without Pelvic Floor Physical Therapy (PFPT)



Conclusions: Following ONB, continence improves significantly by 6 months, and plateaus with 92% of patients achieving daytime continence by 12-18 months. Those who received PFPT have faster return to daytime continence in the first year compared to the non-intervention group. Further research with bigger sample size is needed to provide more robust evidence to support the value of PFPT in continence after RC and ONB.

UP.554

Online, Patient-Reported Quality of Life Outcomes Following Urinary Diversion: A New Era

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Introduction and Objectives: There are two common types of urinary diversions post radical cystectomy and both attempt to optimise patient quality of life (QoL). There is little evidence offering comparative analysis of long-term QoL outcomes between patients with ileal conduit diversion (ICD) and neobladder (NB). We aimed to assess this data in Australia.

Materials and Methods: Based on results from Bladder Cancer Australia's patient-led online survey, overall satisfaction with urinary diversion, urinary and bowel function and the ability to adapt to new routines was analysed. Results of the survey completed between December 2014 and March 2017 were assessed. The NB survey yielded 171 responses and the ICD survey 69 responses.

Results: Patients were satisfied with their choice of operation, despite the type they chose. Continence issues were reported by 105/155 (68%) of patients with NB, while bag issues were much less frequently reported by the ICD group. Results varied in both groups regarding adaptation to new routine. Changes

in bowel function were comparable between the two cohorts (51% ICD; 59% NB). Overall satisfaction was rated a median [range] value of 9 [0- 10] by both NB and ICD patient cohorts.

Conclusion: Despite varied responses in changes to day and night routine in both groups and urinary dysfunction in NB subjects, patients undergoing urinary diversion may be reassured of reasonable satisfaction for both intervention types. As with all operations, patients must be counselled on the positive and negative aspects of each as to make an informed decision. This data may be used to highlight particular comparative aspects to aid in this decision.

UP.555

A Study of Clinical Predictors Associated Intrinsic Sphincter Deficiency in Women with Stress Urinary Incontinence

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Introduction and Objective: Recently, intrinsic sphincter deficiency (ISD) is known as important factor for results of surgery in SUI. Clinical factors that can predict the ISD is uncommon. The aim of this study is to determine predictive clinical factors for ISD in female patients with SUI.

Materials and Methods: We classified the patients into three groups according to the value of VLPP>90cmH_2O (AI: anatomical incontinence), between 61cmH_2O and 90cmH_2O (EV: equivocal) and <60cmH_2O (ISD). In all groups, we performed a full examination, evaluation of history, physical examination, uroflowmetry and complete urodynamic study. Univariate analysis was performed by $\chi 2$ (chi squared) or T-test for categorical variables, respectively. The multivariate study was performed by Pearson's correlation analysis in order to get clinical predictors of VLPP<60cmH_2O. Then, statistically significant p value was considered $p<0.05$ by T-test.

Results: A A hundred and eighty nine patients were combined three groups; 56 patients (AI, 29.7%), 64 patients (EV, 33.8%) and 69 patients (ISD, 36.5%). In the univariate analysis, it was shown that a significant difference is associated with maximal urethral closing pressure (MUCP) ($p = 0.03$) and Stamey classification ($p = 0.006$) between ISD and AI. The more urinary symptom grade was severe, the more frequency of ISD was higher. However, in multivariate analysis, independent predictor of ISD is only the presence of grade II, III symptoms in Stamey classification ($p = 0.001$).

Conclusion: As a result, the more severe symptoms of urinary incontinence, there is a high possibility of ISD. The degree of urinary incontinence is a relevant clinical factor to predict the ISD. We believe that it is possible to help for evaluation and the appropriate surgical technique to the EV. Currently, absolute cut off value to diagnose ISD has not yet been determined. There is a need for study of clinical factors that can predict the ISD.

UP.556

Is It Necessary to Repair Grade 2 Cystocele Combined with Stress Urinary Incontinence for Better Urinary Symptoms?

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Introduction and Objectives: Surgical treatment of Grade 2 cystocele combined with stress urinary incontinence (SUI) has been controversy until now. So we investigated patient's urinary symptoms after surgical treatment of grade 2 cystocele combined with SUI using questionnaires and voiding diary.

Materials and Methods: From January 2010 to December 2013, 69 patients with grade 2 cystocele combined with SUI were enrolled. They were divided into two groups according to the surgery type; only sling operation (Group A, n=44) and sling operation + cystocele repair (Group B, n=25). Patients were conducted preoperative physical examination, urodynamic study, questionnaires (ICIQ-SF, ICIQ-OAB) and three day voiding diary. Three months postoperatively, physical examination, questionnaires (ICIQ-SF, ICIQ-OAB) and three day voiding diary of patients were reevaluated.

Results: There were no significant differences between groups for the preoperative questionnaires (ICIQ-SF/ICIQ-OAB), voided volume, number of voiding, functional bladder capacity and the postoperative ICIQ-SF (table 1, 2). Significant differences were observed between groups A and B with respect to the postoperative ICIQ-OAB (8.84±1.06 vs. 6.53±0.54, P=0.021) and the actual number of nightly voids (1.65±0.90 vs. 0.94±0.78, P=0.042) (Table 2). The functional bladder capacity significantly increased (255.5±±79.4 vs. 307.6±98.4, P=0.017) in Group B (Table 2).

Conclusions: To repair grade 2 cystocele combined with SUI is beneficial because it decreases the overactive bladder symptoms and the actual number of nightly voids and increases the functional bladder capacity.

UP.556, Table 1. Basic Characteristics of the Both Groups

Characteristics	Group I(n=44)	Group II(n=25)	p- value
Age	55.9±0.8	52.6±1.0	0.602
No. of delivery	2.7±0.1	2.4±0.2	0.097
Co-morbid disease (%)	12(27.2)	9(36)	0.054
Symptom grade		7(28)	0.439
Grade I (%)	10 (22.7)	18(72)	0.665
Grade II (%)	34 (77.8)		
Duration of symptoms (years)	6.89±3.67	7.09±2.89	0.889
ICIQ SF	15.6±0.6	16.6±0.5	0.879
ICIQ- OAB	14.5±1.6	13.8±0.9	0.553
Urodynamic study parameter			
Uninhibited detrusor contraction (%)	21(48)	11(44)	0.781
Valsalva leak point pressure (mmHg)	86.2±21.3	90.2±13.4	0.432
Max urethral closing pressure (mmHg)	51.3±21.3	50.5±27.6	0.309
Functional urethral length (cm)	3.7±0.89	3.5±0.56	0.665
Voiding diary parameters			
24-hour urine volume (ml)	1,654.83±483.73	1,606.90±475.41	0.861
24-hour total void number	10.72±3.02	11.62±2.81	0.098
Daytime frequency	7.91±3.93	8.22±3.9 4	0.076
FBC	267.32±112.82	255.5±±79.4	0.113
ANV	1.61±0.83	1.65±0.54	0.341
NUV	511.61±128.62	499.60±134.84	0.225
NPi	0.32±0.21	0.36±0.32	0.876
Ni	1.72±0.41	1.52±0.72	0.332
NBCi	0.41±0.50	0.50±0.23	0.776

FBC: Functional bladder capacity, ANV: Actual number voids, NUV: Nocturnal urine volume, NPi: Nocturnal polyuria index, Ni: Nocturnal index, NBCi: Nocturnal bladder capacity index.

UP.557

The Impact of an Autologous Sling Therapy in the Urinary Incontinence Disease Treatment of Patients from the Low Currency Countries

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Introduction and Objective: The main purpose of the study is to describe the results of a contemporary

UP.556, Table 2. Comparison of the Clinical Outcome and Post-Operative Changes of ICIQ –SF, ICIQ-OAB, Voiding Diary after TOT in Both Groups

Characteristics	Group I(n=44)	Group II(n=25)	p-value
Surgical outcome			
ICIQ- SF	4.3±0.6	3.9±1.3	0.298
ICIQ -OAB	8.84±1.06	6.53±0.54	0.021*
Voiding diary parameters			
24-hour urine volume (ml)	1,545.8±483.7	1,676.4±375.4	0.861
24-hour total void number	9.56±1.06	10.62±2.80	0.098
Daytime frequency	5.59±3.91	5.99±1.96	0.076
FBC	255.31±79.45	307.6±98.4	0.017*
ANV	1.65±0.90	0.94±0.78	0.042*
NUV	411.60±118.65	456.65±104.88	0.225
NPi	0.28±0.22	0.31±0.34	0.876
Ni	1.76±0.5	1.69±0.78	0.332
NBCi	0.45±0.50	0.51±0.25	0.776

UP.556, Table 3. Complication Rate in the Both Groups

Characteristics	Group I(n=44)	Group II(n=25)	P-value
Urinary retention	2	2	0.056
UTI	0	1	0.087
Denovo urgency	3	4	0.211
Vaginal erosion	1	3	0.096

technique for autologous rectus fascial sling insertion for the Third World countries patients who suffer from the stress urinary incontinence (SUI).

Materials and Methods: We conducted a retrospective review of the case notes of all patients who got through the autologous mid-urethral sling (AS) insertion operations performed by one surgeon in our institution during a four-year period (2010-2016). During our innovative technique, the surgeon uses a minimal suprapubic incision, a specially designed reusable retropubic needle, and mid-urethral sling positioning in a tension-free fashion as opposed to a tensioned bladder neck sling. We would like to make a stress on the fact that this method of the treatment is of special importance for the underdeveloped countries due to its cost-effectiveness.

Results: Fifty six patients were selected. 64 % of patients reported pure symptoms of SUI, whilst 32% of them had the urinary incontinence of a mixed type. Patients used an average of 5 pads per day, and 12% of patients had at least one previously failed SUI procedure. Post-operative symptoms questionnaires showed the average Patient Global Impression of Improvement (PGI) scores of 2, 1 (1–4), indicating that the majority of patients were very much or much improved. Only 11 % of patients reported de novo OAB symptoms. Intraoperative bladder perforation occurred in only 1 case. There was no incidence of chronic pain, sexual dysfunction or erosion.

Conclusion: In a heterogeneous group of women who have primary or recurrent stress urinary incontinence, the AS was proofed to have a good subjective short-term treatment rates with acceptable patient-reported satisfaction scores. We report a low rate of de novo OAB symptoms, no cases of erosion and no chronic pelvic, groin, or vaginal pain. We believe that AS is a good alternative to synthetic mid-urethral sling surgery and could be offered to women contemplating surgery for SUI.

UP.558

Postoperative Urinary Retention as a Prognostic Factor for Longer-Term Continence Outcomes after Urethral Bulking Agent Injection for Treatment of Female Stress Urinary Incontinence

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Introduction and Objective: Injection of Macroplastique urethral bulking agent is a minimally invasive treatment for female stress urinary incontinence. Although reportedly safe and effective, post-procedure urinary retention sometimes occurs and is often anxiety provoking for patients. The objective of this study was to assess the continence outcome of women who received urethral bulking agent injection for treatment for stress urinary incontinence complicated by post-procedure urinary retention.

Materials and Methods: A review of all women who received Macroplastique urethral bulking agent injections for treatment of stress urinary incontinence, from January 1, 2014 to October 1, 2016, at a single institution, was performed. Perioperative complications (such as urinary retention) and continence outcomes were recorded. Outcomes of women who experienced post-procedure urinary retention were compared with outcomes of women who did not have post-procedure urinary retention. Statistical analyses included the Chi Square test.

Results: Thirty-two female patients (mean age 62, range 39-89 years) were identified as having received Macroplastique urethral bulking agent for treatment of urinary incontinence during the study period at our institution by four urologists. Mean duration of follow-up was 11 months. Overall, mean number of pads used per patient per day preprocedure was 2.5 and postprocedure 1.3. Thirteen percent (4/32) of women experienced urinary retention after injection of the Macroplastique urethral bulking agent. Most cases of post-procedure urinary retention resolved spontaneously. At last follow-up, the rate of continence cure among patients who experienced post-procedure urinary retention was significantly higher than among patients who did not experience PUR (75% (3/4) versus 21% (6/28), p<0.05).

Conclusion: Macroplastique urethral bulking agent injections for treatment of female stress urinary incontinence was complicated by post-procedure urinary retention in 13% of patients. The longer term rate of continence cure was significantly better in patients who had post-procedure urinary retention compared with patients who had no post-procedure urinary retention (75% versus 21%, p<0.05).

UP.559

Pad Testing in Urinary Incontinence – Is it Reliable?

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Introduction and Objective: The pad test is widely accepted as a measure of the seriousness of urinary incontinence, although no clear standard exists regarding the volume of lost urine. Our study aims to quantify the volume of urine that makes a patient change the pad, since this impacts the total daily number of pads.

Materials and Methods: Our prospective study included 20 women and 10 men with urinary incontinence, regardless the mechanism. We used XL size absorbent pads which were weighted dry and then submerged into water and weighted again, so a maximum capacity of 230 ml was measured. The patients were given the same type of absorbent pads and were requested to change them the way they usually did before. The patient had to weigh each pad after changing it and to enter the value in a table, for two consecutive days, using the same scale, also provided by us. The patients were also asked to note if they changed the pad because they were feeling wet or because of other cause.

Results: In the female group, when they reported feeling wet, the urine volume ranged between 10 and 230 ml while when the pad was changed for other reason, the volume ranged between 0 and 230 ml. In one individual, the average volume per pad ranged between 11 and 230 ml in this group. In the male group, the wet sensation associated volumes between 50 and 230 ml

and the other reason for changed had behind it volumes of 0 to 230 ml. In men, the average volume per pad ranged between 18 and 230 ml.

Conclusion: Evaluating the daily volume of lost urine using the number of pads is unreliable. It can be of some use for monitoring a single individual but it loses sense when trying to compare larger number of patients.

UP.560

Female Urinary Incontinence in the Bahamas: An Epidemiological Study

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Introduction and Objectives: Female urinary incontinence is a common health problem in developed nations. However its prevalence in developing nations has not been as well-studied. This study evaluates the epidemiology, prevalence and impact of female urinary incontinence in The Bahamas.

Materials and Methods: Female patients attending multiple participating polyclinics and ambulatory clinics in various regions of The Bahamas from 16th February 2009 through 21st January 2015 were invited to participate in the study. Study participants completed the Norwegian Urogynaecological Group Urinary Incontinence Questionnaire (NUGG-UIQ). Responses were tabulated and statistical analysis performed in Microsoft Excel 2016.

Results: Eight hundred and fifty one women completed the NUGG-UIQ. Median patient age was 48 years (range 17-101). Prevalence of stress urinary incontinence (SUI) was 40%, with 18% of these women leaking more than 'drops/moist underwear'. Prevalence of urgency urinary incontinence (UUI) was 47%, with 17% of these women leaking an amount more than 'drops/moist underwear'. Among the women who wore pads, 45% wore 1-4 pads per day, two patients wore more and 53% wore less. Thirteen percent (52/403) of women with UUI experienced at least one UUI episode daily. Thirty two percent of women reported being more bothered by UUI than SUI, 9% were more bothered by SUI than UUI and 10% were equally bothered by both SUI and UUI. In examining impact on quality of life, avoidance of activities for fear of urinary leakage was reported by 28% of women. Fifty four of women avoided going places where they were aware a toilet would not be easily accessible. Urinary leakage influenced sleep, social life, family life and vacations in 27%, 11%, 6% and 5% of women, respectively.

Conclusion: Urinary incontinence is a common problem among women in The Bahamas, with the prevalence of SUI being 40% and UUI 47%. Urinary incontinence impacts women's quality of life in The Bahamas; 28% of women avoid activities for fear of urinary leakage and 54% avoid going places where a toilet would not be easily accessible. The results of this epidemiological study demonstrate the need for attention of health policy makers and health care resources.

UP.561

Cost Analysis of Greenlight Photoselective Vaporization of the Prostate Compared to Transurethral Resection of the Prostate for Benign Prostatic Hyperplasia

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Introduction and Objective: Benign prostate hypertrophy (BPH) is a non-cancerous enlargement of the prostate gland, which results in the development of lower urinary tract symptoms that can negatively impact a patient's quality of life. The gold standard treatment for moderate to severe BPH has been transurethral resection of the prostate (TURP), however, this procedure is associated with prolonged hospitalizations and increased complications. An alternative to TURP is Greenlight PVP, which is associated with better perioperative safety and reduced length of stay. The objectives of the research were to 1) assess the cost of Greenlight PVP compared to Olympus Bipolar Power Button and TURP; and 2) assess the predictors of total cost.

Materials and Methods: A retrospective analysis was conducted of perioperative hospital costs of patients who underwent Greenlight PVP, TURP, or Olympus Bipolar Power Button from 2013-2015 at the Toronto Western Hospital. This study focused only on costs to the hospital. A multiple linear regression was performed to identify predictors of total cost. The variables included in regression analysis were patient age, type of procedure, inpatient procedure, Charlson Comorbidity Index, and distance to clinic.

Results: Two-hundred and three patients received one of the three procedures over the study period. The total cost Greenlight PVP was $2,875 per patient compared to $4,633 for Olympus Power Button, and $4,666 for TURP. The linear regression showed that the Charlson Comorbidity score and inpatient procedure were independent predictors of total cost.

Conclusion: Greenlight PVP appears to be a superior economic option when compared to Olympus Power Button and TURP.

UP.562

Publically Funded Overactive Bladder Drug Treatment Patterns in Ontario over Fifteen Years: An Ecologic Study

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UP.561, Table 1. Mean Total cost per Patient per Procedure for Both Inpatient and Day Surgery Cases (n=203)

Variable	Mean (SD) ($)			Difference in cost*			
	Greenlight PVP n=56	Olympus Power Button n=29	TURP n=118	(Greenlight-TURP)	P value	(Greenlight-Olympus Power Button)	P value
Variable Direct							
Labor	847.55 (284.66)	1,766.73 (749.64)	1,651.20 (635.08)	(803.65)	<0.01	(919.18)	<0.01
Supplies	634.85 (357.69)	721.93 (341.56)	778.87 (335.93)	(144.02)	0.01	(87.08)	0.28
Patien specifie supplies	2.19 (8.87)	25.29 (88.10)	20.93 (50.01)	(18.74)	0.01	(23.10)	0.05
Other	1.36 (6.53)	11.46 (7.40)	10.56 (7.98)	(9.20)	<0.01	(10.10)	<0.01
Fixed Direct							
Labor	144.83 (65.43)	319.44 (138.17)	319.10 (121.15)	(174.27)	<0.01	(174.61)	<0.01
Other	23.50 (8.05)	47.29 (17.80)	45.95 (16.70)	(22.45)	<0.01	(23.79)	<0.01
Building equipment	123.92 (62.41)	146.35 (56.92)	162.90 (49.40)	(38.98)	<0.01	(22.43)	0.11
Variable Indirect	719.96 (246.00)	1,108.21 (411.62)	1,124.87 (349)	(404.91)	<0.01	(388.25)	<0.01
Fixed Indirect	376.37 (157.04)	485.95 (172.62)	551.49 (152.50)	(175.12)	<0.01	(109.58)	<0.01
Total Cost	**2,874.53 (938.04)**	**4,632.65 (1,671.27)**	**4,665.87 (1,473.93)**	**(1,791.34)**	**<0.01**	**(1,758.12)**	**<0.01**

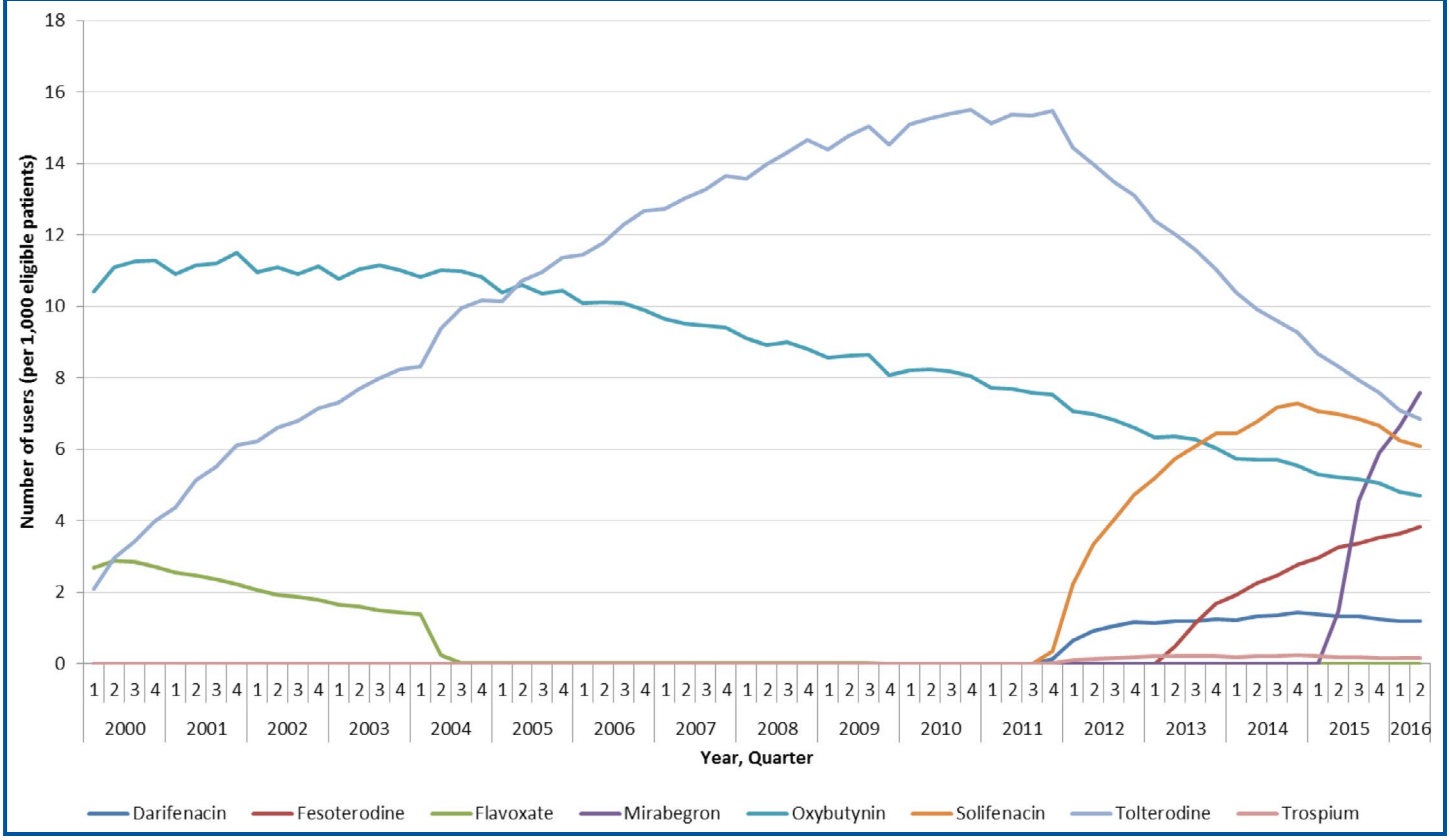
*Bracket indicates that Greenlight is less costly. Costs do not include cost of readmission.

Introduction and Objectives: Medication is considered an important treatment option for patients with overactive bladder (OAB), with four different drugs approved over the last 10 years including the first non-anticholinergic treatment option, mirabegron. We set out to describe the drug utilization patterns for OAB in Ontario, Canada over the last 15 years.

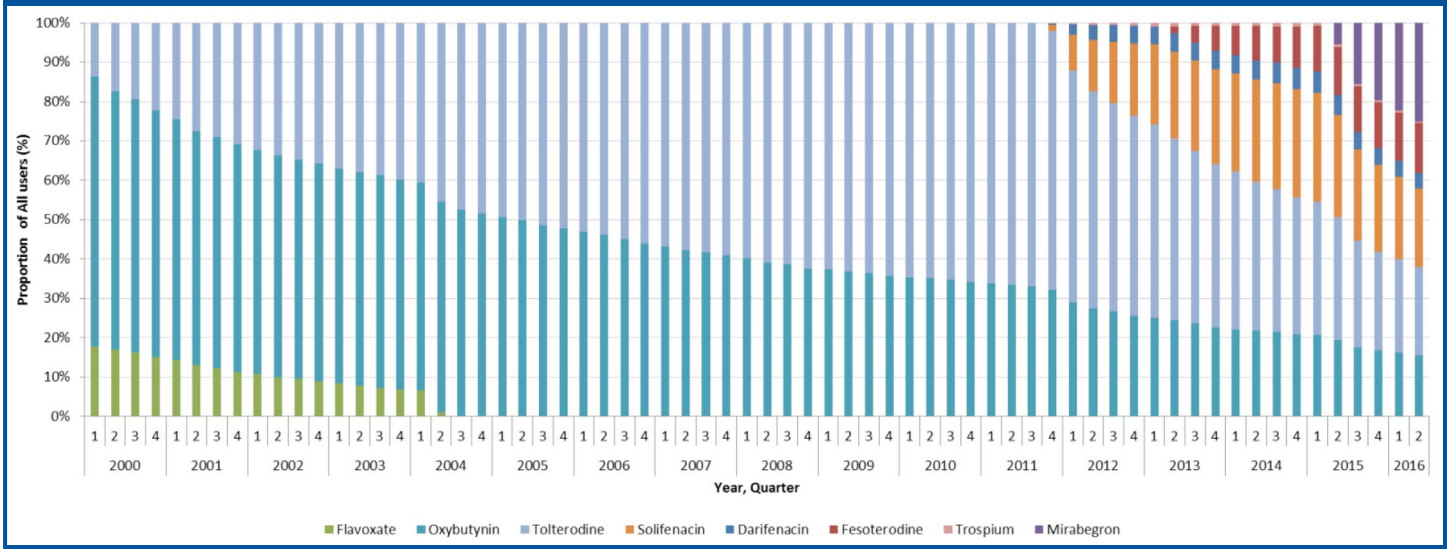
Materials and Methods: We conducted a repeated cross-sectional study examining quarterly publically-funded prescription claims for OAB medications reimbursed by the Ontario Public Drug Program (OPDP) from January 1, 2000 to June 30, 2016 in Ontario, Canada.

Results: Over the 15-year study period, there were 10,131,681 prescription claims for publically funded OAB treatments dispensed in Ontario. The number of OAB medication users per year has increased by 221% over the study period (Figure 1). We report two major changes in prescription patterns for OAB. The first was the rise of newer, more selective anticholinergics (tolterodine, solifenacin, and darifenacin) replacing oxybutynin. This led to a 77.4% reduction in the rate of use of oxybutynin over the study period. Recently we see the emergence of mirabegron as the most commonly prescribed treatment for OAB. By the final quarter of the observation period mirabegron was the most commonly used OAB treatment with 25.0% (n=19,411) of all users in Ontario (n=77,660) (Figure 2).

UP.562, Figure 1. Rate of Publically Funded Overactive Bladder Treatment Users per 1,000 eligible in Ontario from 2000 to 2016



UP.562, Figure 2. Proportion of Publically Funded Overactive Bladder Treatment Users by Drug in Ontario from 2000 to 2016



Conclusion: Perceived superiority of newer agents in terms of improved dosing regimens and side-effect profiles are likely the reason for these shifts in treatment patterns. Our findings highlight the rapid uptake of novel agents and a major shift in the treatment of OAB.

UP.563

Characteristics Associated with Neuromodulation Device Explantation for Declining Efficacy

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Introduction and Objectives: Patients with implanted neurostimulation devices for bladder symptoms may undergo explantation for a variety of reasons. We explored whether explantation for declining efficacy is associated with symptom severity or other patient characteristics.

Materials and Methods: We reviewed patients in our prospective database that had an implantable pulse generator (IPG) placed. Those that were eventually explanted for declining symptoms were propensity matched 1:2 with non-explanted controls on age, gender, lead location, primary indication for implant, and length of follow up. History, baseline voiding diaries, and Interstitial Cystitis Symptom/Problem Index (ICSIPI) and Overactive Bladder symptom severity (OABq ss)/health related quality of life (HRQOL) at baseline and 3 months were compared between groups with Pearson's $\chi 2$ (Chi square), Fisher's Exact, and Wilcoxon rank sum tests.

Results: Fifty-two explanted patients were matched with 104 controls. Explants were performed at years 1-6 in 19, 29, 39, 44, 49 and 52, respectively. Most in both groups had overactive bladder with urge incontinence. When compared, a lower proportion in the explanted group reported marked/moderate improvement in symptoms after lead placement and just prior to IPG implant (13/19; 68.5% vs. 58/63; 92.1%; p=0.016). After implant, more explanted patients had a complication (18/52; 34.6% vs. 3/104; 2.9%; p=0.0001). Explanted patients had more reprogrammings within the first year 1 year (median 2 vs. 0.5; p<0.0001). Baseline voiding diaries, and baseline and 3 month ICSIPI scores, did not differ between groups. Although the explanted group overall had better HRQOL scores at baseline, in just those patients that completed both baseline and 3 month measures there were no statistically significant differences at either time point between groups. In addition, the explanted group had fewer with hypertension (40.4% vs. 58.7%, p=0.031), fewer comorbidities (median 1 vs. 2, p=0.026), higher income (p=0.019), and more women on hormone replacement therapy (34.9% vs. 10.2%; p=0.0006) even though the proportions that were postmenopausal were similar.

Conclusion: Explanted patients had more comorbidities, complications, and lower rate of marked/moderate improvement after lead placement. Baseline and follow up symptom measures were similar indicating that symptoms are not associated with explantation.

UP.564

Trends in the Use of Older Overactive Bladder Agents and Uptake of Fesoterodine and Mirabegron in Canada

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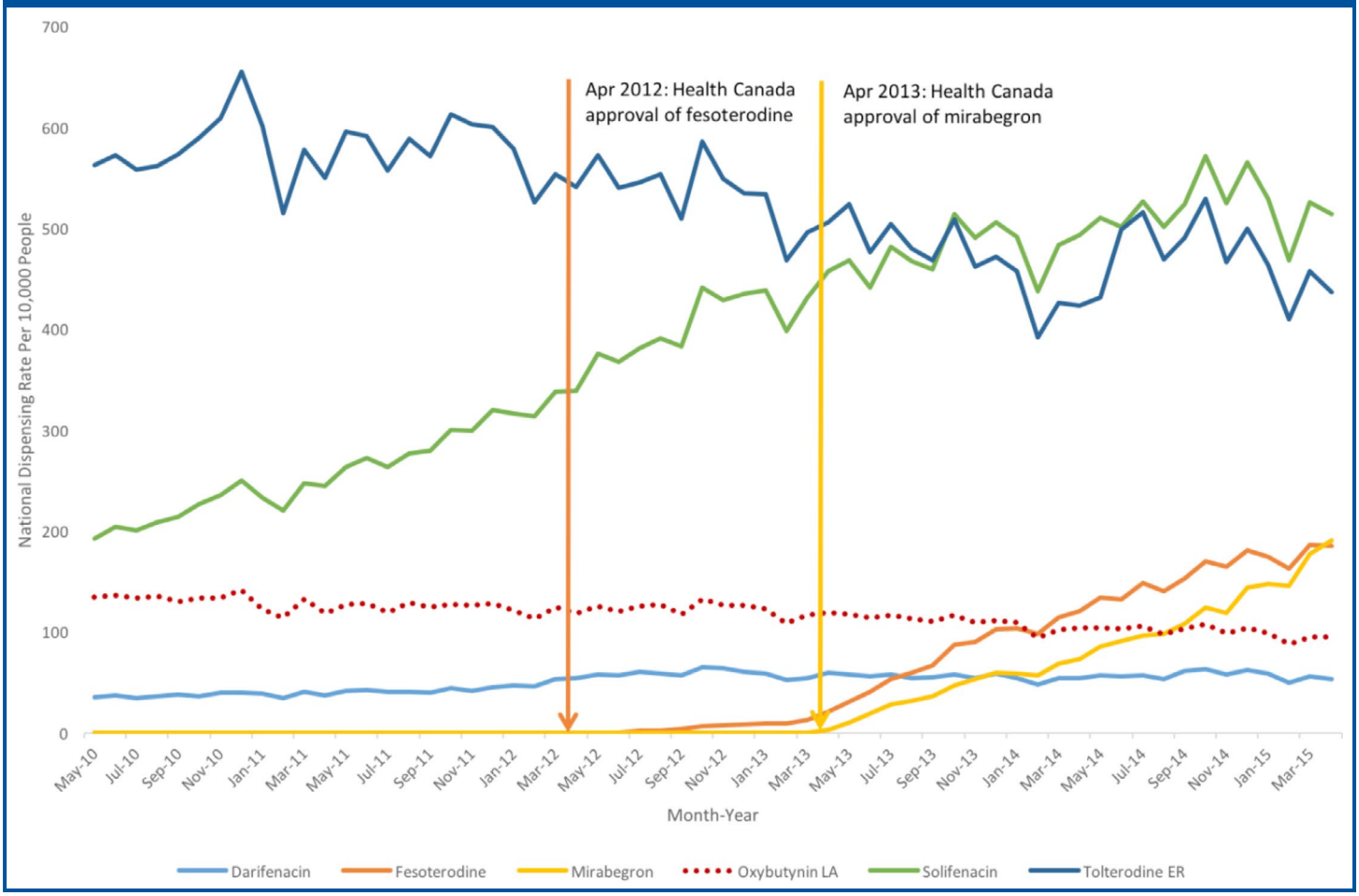
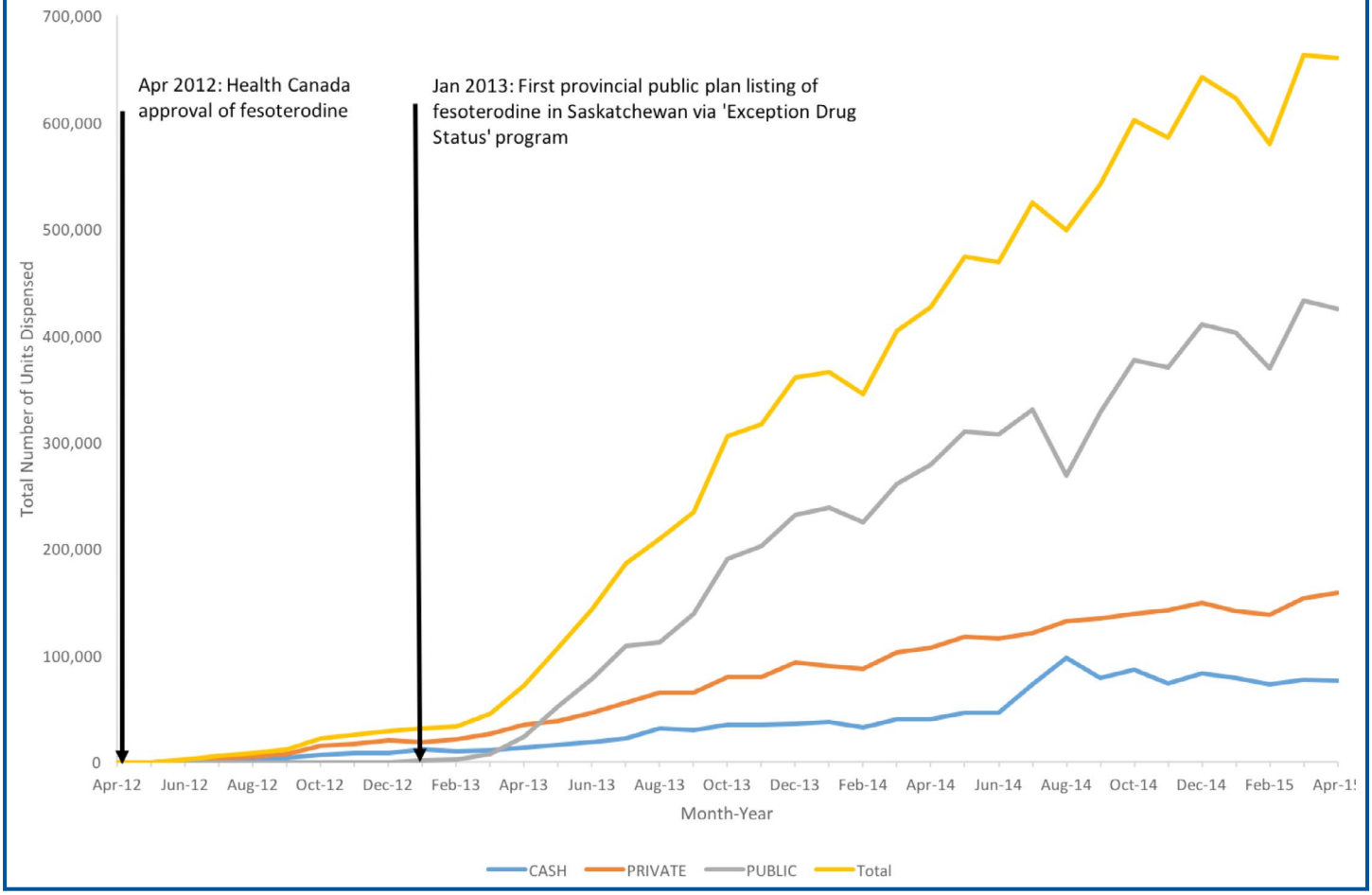
Introduction and Objective: Anticholinergics are first-line pharmacologic agents for overactive bladder (OAB), but have considerable side effects. Two recent additions to the market are an anticholinergic fesoterodine, and mirabegron, a therapeutically novel beta-3 agonist.

Materials and Methods: We conducted a population-based cross-sectional study of outpatient prescriptions for long-acting oral OAB agents dispensed

UP.564, Figure 1. National Dispensing Rate of Long-Acting OAB Agents per 10,000 Population, by Drug



UP.564, Figure 2. Payment of Fesoterodine By Payer Type Since Health Canada Approval



UP.565, Table 1. Patient Characteristics and Treatment Outcomes

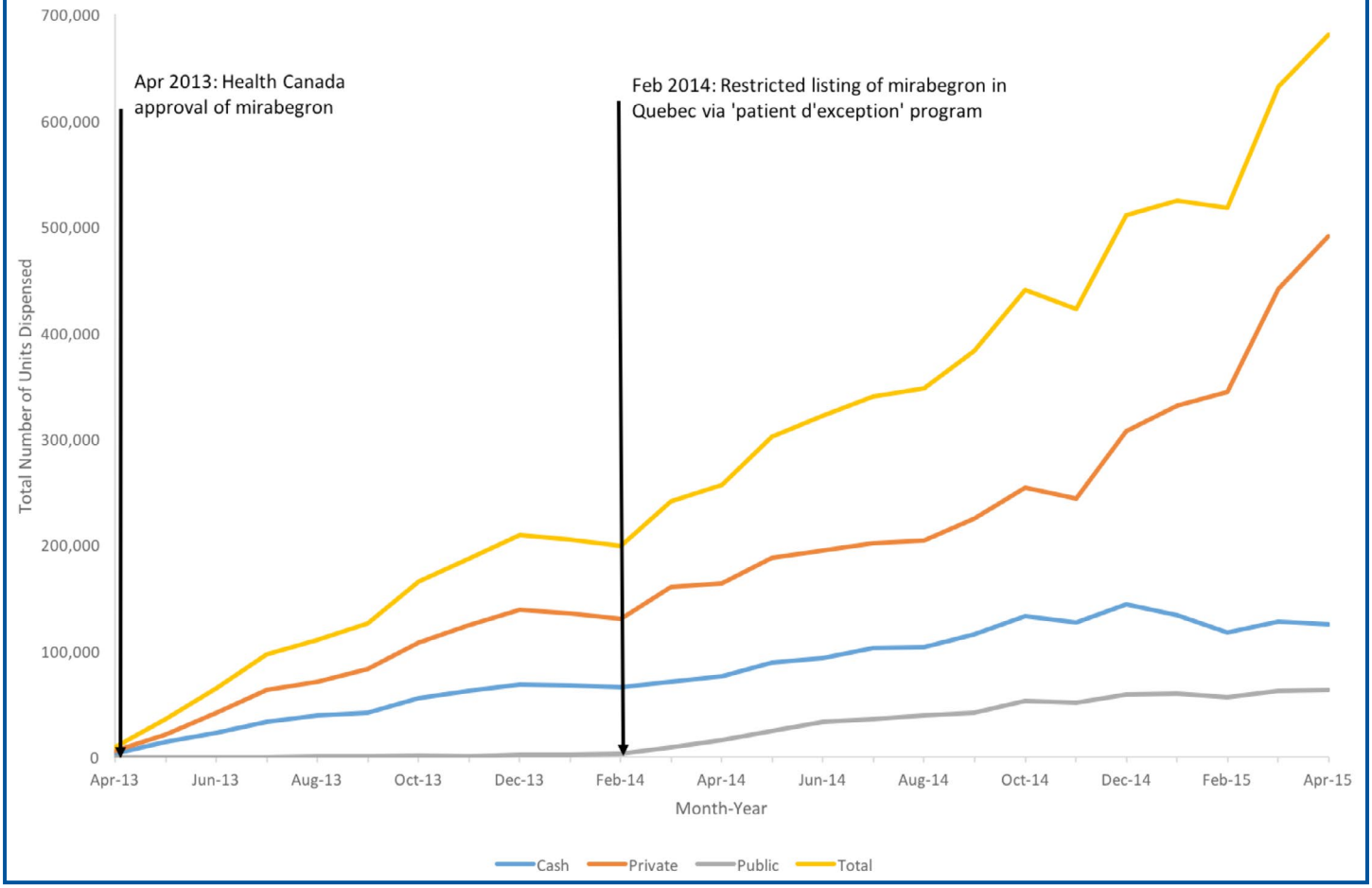
Bladder neck preservation (BNP)	BNP (n = 390)	Non-BNP (n = 138)	P- value
	Mean ± SD, Frequency (%)	Mean ± SD, Frequency (%)	
Age (yr)	70.9 ± 6.3	69.3 ± 8.7	0.227
Initial PSA (ng/dL)	15.1 ± 24.7	11.2 ± 12.1	0.305
Biopsy Gleason score			0.408
≤ 6	136 (34.9%)	53 (38.4%)	
7-8	150 (38.5%)	63 (45.7%)	
>9	104 (26.7%)	22 (15.9%)	
Clinical T stage			0.001*
T1, T2	243 (62.3%)	58 (42.0%)	
T3, T4	147 (37.7%)	80 (58.0%)	
Pathologic Gleason score			0.031*
≤ 6	102 (26.2%)	14 (10.1%)	
7-8	179 (45.9%)	81 (58.7%)	
>9	109 (27.9%)	43 (31.2%)	
Pathologic prostate volume (cc)	43.2 ± 21.3	40.2 ± 15.2	0.219
Positive bladder neck surgical margin	30 (7.7%)	14 (10.1%)	0.387
Lymph node dissection	368 (94.4%)	6 (4.3%)	<0.001*
Urinary incontinence at 1yr	90 (23.0%)	50 (36.2%)	0.027*

to individuals in Canadian provinces between May 2010 and April 2015 to examine the differences in the uptake of the newer agents and their reimbursement through cash, private and public payers.

Results: The national dispensing rate of OAB agents increased by 60% from May 2010 to April 2015 (from 924 to 1475 units per 10,000). We observed an increase in the dispensing rate of fesoterodine, solifenacin and mirabegron, but a decrease in that of tolterodine and oxybutynin. Mirabegron was adopted rapidly after Health Canada approval, growing to a rate of 191 units per 10,000 by the end of the study, with its uptake being primarily funded by private payers (72.2%). Conversely, fesoterodine's uptake was minimal (8.3 units per 10,000) prior to its listing on public plans. This increased to 185 units per 10,000 by the end of the study, with the majority (65%) paid for by public insurers.

Conclusions: The differences in the uptake and reimbursement of two new OAB agents emphasize the impact of therapeutically novel agents on the prescription rates of older OAB agents with significant adverse effects. Further studies are needed to explain changes in the dispensing rates as more provinces list the newer drugs on their formulary.

UP.564, Figure 3. Payment of Mirabegron by Payer Type since Health Canada Approval



UP.565

Identification of Each Threshold of Four OAB-Symptoms Severity to Impact Significantly on QOL Suggested by the Visual Analogue Scale to Evaluate QOL or Bother Specific to Each Symptom

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Introduction and Objective: Overactive bladder (OAB) harms patients' QOL. The standard symptom score questionnaire for OAB, such as OABSS, is aiming to question the severity of four OAB-specific symptoms (Q1; frequency, Q2; nocturia, Q3; urgency, and Q4; incontinence) but not to assess the QOL specific to OAB-symptoms. We have developed assessment tool to evaluate the QOL (or bother) specific to each of the four OABSS-questions with visual analogue scale (VAS) of a 100-mm line, which was called OABSS-VAS. Aim of this study was to identify each threshold of the OABSS-questions to impact significantly on patient's QOL (or bother) suggested by the OABSS-VAS.

Materials and Methods: We analysed total of 500 female patients who visited our clinic and answered both OABSS (Q1; 0 to 2, Q2; 0 to 3, Q3; 0 to 5, Q4; 0 to 5) and OABSS-VAS questionnaire at the same time. The median age of the patients was 69 (22-94) y.o. In order to identify the significant impact on QOL, we defined greater than 60-mm as the threshold for the VAS-measure.

Results: The outcome of the relationship between OABSS-VAS and each OABSS were demonstrated in Figure 1 (black arrows indicate the threshold). It was demonstrated that he threshold of daytime frequency to impact significantly on patients' QOL was identified 8-14 times and that of nocturia was 2 times. It was also demonstrated that the OAB-patients' QOL could be significantly disturbed when urgency occurs "once a day", and also urge incontinence exists even "less than once a week".

Conclusion: Concomitant use of both OABSS and OABSS-VAS identified each concrete threshold of the 4 OAB-symptom severity to impact significantly on patient's bother.

UP.566

Treatment Strategy of Targeting Symptoms that Each Patient Wants to Be Treated Most Will Bring the Best Improvement in Overall Quality of Life for Individual OAB Patients

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Introduction and Objective: Overactive bladder (OAB) is a condition that harms quality of life (QOL). In order to aim for physician to understand the symptoms that each patient suffers most and wants to be treated, we have reported the utility of our validated questionnaire of QOL specific to each of the 4 OABSS-questions with visual analogue scale (VAS), which was called OABSS-VAS. Aim of this study

UP.565, Table 2. Factors Related to Urinary Incontinence 1 Year after Radical Prostatectomy

	Univariate			Multivariate		
	OR	(95% CI)	p value	OR	(95% CI)	p value
Age> 70 (yr)	1.038	1.011-1.083	0.018*	1.083	1.027-1.158	0.011*
Bladder neck preservation	0.638	0.358-0.937	0.021*	0.456	0.249-0.831	0.007*
Pathologic prostate volume (cc)	1.058	0.998-1.076	0.093	1.021	0.997-1.030	0.083
Positive bladder neck surgical margin	1.218	0.638-2.847	0.831	1.527	0.792-3.097	0.297

UP.566, Table 1. Statistical Correlation (r) to Overall QOL Improvement (⊿) by Improvement (⊿) in Each of OABSS Q1-Q4 and OABSS-VAS Q1-Q4

OAB Symptom Score	r	p	VAS for bother/QOL	r	p
⊿OABSS Q1	0.09	0.0983	⊿OABSS Q1	0.66	<0.0001
⊿OABSS Q2	0.30	<0.0001	⊿OABSS Q2	0.56	<0.0001
⊿OABSS Q3	0.53	<0.0001	⊿OABSS Q3	0.82	<0.0001
⊿OABSS Q4	0.51	<0.0001	⊿OABSS Q4	0.79	<0.0001

was to assess whether treatment strategy of targeting symptoms that each patient wants to be treated most will bring the best improvement in overall QOL for individual patients.

Materials and Methods: Before and after the treatment, all patients were simultaneously answered both OABSS and OABSS-VAS. Total of 336 female patients were analysed. The medium age of patients was 70 (30-91) y.o. The average treatment period was 1.77 ± 0.84 months.

Results: Both each OABSS score as well as each OABSS-VAS measure were significantly improved by the treatment. When focusing on the pre-treatment highest OABSS-VAS measure, improvement of that had significant correlation to the improvement of overall QOL (r=0.78, p<0.0001), while that by highest OABSS was less (r=0.50, p<0.0001) than it. Table 1 demonstrated the statistical correlation to the improvement of overall QOL by improvement in each of OABSS Q1-Q4 and each of OABSS-VAS Q1-Q4, respectively. This indicate the improvement of the VAS measure significantly predict the overall QOL improvement in all 4 symptom of OAB.

Conclusion: The concomitant use of OABSS (which represents the symptom severity) with OABSS-VAS (which represents the symptom-specific QOL or bother) contributed to identify the key symptom which an individual patient suffers most and wants to be treated. The improvement of the key-targeting-symptom of individuals significantly correlated with the clinical goal of the improvement of overall QOL in patients with OAB.

UP.567

Impact of Periurethral Inflammation on Continence Status Early after Robot-Assisted Radical Prostatectomy

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Introduction and Objective: The aim of the present study was to investigate the effect of periurethral inflammation on the continence status after robot-assisted radical prostatectomy (RARP).

Materials and Methods: This study included 101 consecutive prostate cancer patients treated with RARP. To evaluate the status of periurethral inflammation, most apical urethral tissues in RARP specimens from these patients were immunohistochemically stained with antibodies for tumor necrosis factor-α (TNF-α) and interleukin-1β (IL-1β). Masson trichrome staining (MTS) of these specimens was also performed to determine the degree of periurethral fibrosis. Uni- and multivariate logistic regression analyses were performed to analyze the correlation between several factors and the postoperative continence status.

Results: Of the 101 patients, urinary continence was achieved in 37 and 62 at 1 and 3 months after RARP, respectively. Immunohistochemical study revealed that 59, 41, and 56 were positive for TNF-α, IL-1β, and MTS, respectively, and the findings on MTS were significantly correlated with those on TNF-α and IL-1β expressions. At 1 month after RARP, the proportions of patients positive for TNF-α expression and MTS, but not IL-1β expression, in the incontinence group were significantly greater than those in the continence group, while at 3 months after RARP, a significantly greater proportion of patients in the incontinence group were judged to be positive for TNF-α and IL-1β expressions, but not MTS, than the continence group. The following factors were identified as independent predictors of the continence status: preoperatively observed detrusor overactivity and TNF-α expression at 1 month after RARP, and TNF-α expression at 3 months after RARP.

Conclusions: Periurethral inflammation, particularly which evaluated by TNF-α staining, could be a useful predictive parameter of the continence status early after RARP.

UP.568

The Impact of Bladder Contractility Index (BCI) in the Management of Underactive Bladder

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Introduction and Objective: Bladder contractility Index (BCI) is considered one of the possibilities to evaluate the grade of bladder underactivity. The aim of this study is to evaluate the importance of BCI in the management of underactive bladder.

Materials and Methods: We performed a retrospective study over a period of 3 years and 9 months (January 2013-September 2016) in Mures County Hospital, Clinic of Urology, including 91 patients with, mixed LUTS predominant voiding dysfunctions, the results of urodynamic investigations and the evaluation of BCI. Detrusor underactivity was defined by BCI less than 100 using the formula: PdetQmax+5Qmax. (Pdet=detrusor pressure, Qmax= peak flow rate)

Results: The majority of the patients were women, 53 (58.24%), mean age: 58.58 years (+/- 14.06 standard deviation) with extremities between 27 and 82. The possible aethiology of UAB varied: diabetes 34 cases (37.4%), history of pelvic surgery in 33 cases (36.3%), psychotropic medication in 17 cases (18.7%), neurological diseases in 30 cases (33%), age (older than 70) in 25 cases. Complete urinary retention was revealed in 10 cases (11%), incomplete urinary retention in 64 cases (69.2%) and absence of post-void residual urine (PVR) in 17 cases (18.7%). The arithmetic mean of PVR was 153.74 ml (+/- 87.31 standard deviation), with extremities between 30 and 400 ml. Urodynamical findings: the median Qmax, 7 ml/s, median Pdet, 14 cmH2O. The median value of BCI (87 from 91 patients) was 55 with extremities between 17 and 98. We identified a statistical significant relation between value of BCI and diabetes (p=0.003) and neurological diseases (p=0.015), BCI tends to decrease with age. The value of BCI was lower in patients with highest volume of PVR. Spearman's test revealed a strong correlation between value of BCI and Qmax (p<0.0001) but no correlation with Pdet (p=0.25).

Conclusion: The value of BCI less than 100 represents an important parameter in diagnosis of underactive bladder. Also it would be a helpful tool in deciding the management of bladder outlet obstruction.

UP.569

Influence of Botulinum Toxin Type A on Urodynamic Parameters and Sexual Function in Women with Neurogenic Detrusor Overactivity

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Introduction and Objectives: Neurogenic detrusor overactivity (NDO) has a significant negative impact on all aspects of the patient's quality of life (QOL). Sexual function (SF) is one of the fundamental components of QOL. The study aim was to assess level and dynamics of SF in women with NDO during treatment with botulinum toxin type A (BTXA). We suggest that normalization of bladder function may lead to reduction of sexual disorders.

Materials and Methods: Sixty seven patients (21-69 years old) with NDO confirmed urodynamically were divided into 3 groups: I - NDO without imperative urinary incontinence (n=26); II - NDO with imperative urinary incontinence (n=23); III - NDO with functional bladder outlet obstruction (fBOO, n=18). All patients were treated by 200 units of BTXA, which were injected into 20 points of detrusor. The patients of group III also got 100 units of BTXA in striated bladder sphincter. All women were surveyed using special questionnaire (FSFI) which included 6 main indicators of SF quality (sexual desire, sexual arousal, lubrication, orgasm, satisfaction, pain) before and after treatment, as control urodynamic investigation which was made after an average of 2 months.

Results: Urodynamic parameters before and after treatment are presented in table. In women with NDO the FSFI analysis showed a reduction in all SF items and the total score, which was more expressed in patients of group II. Two month after BTXA in group

UP.569, Table 1.

Parameters	Groups	Before BTXA	2 months later	p
MCC (ml)	I	163,0 [139,0; 174,0]	349,0 [326,0; 351,0]	<0,001
	II	130,0 [121,0; 189,0]	315,0 [269,0; 351,0]	<0,001
	III	156,0 [130,5; 223,5]	326,5 [247,5; 402,5]	<0,001
pdetmax (cm H_2O)	I	21,0 [20,0; 23,0]	2,0 [1,5-4,3]	<0,001
	II	55,0 [29,0; 80,0]	23,0 [14,5; 33,5]	0,002
	III	47,0 [18,5; 64,6]	12,5 [3,5; 25,5]	0,068
Qmax (ml/sec)	I	22,0 [20,0; 26,0]	17,0 [16,0; 19,0]	<0,001
	II	29,0 [27,0; 31,0]	18,0 [17,0; 19,0]	<0,001
	III	8,2 [5,0; 10,0]	14,0 [6,5; 19,0]	0,004
PVR (ml)	I	0,0 [0,0; 0,0]	44,0 [37,0; 47,0]	<0,001
	II	0,0 [0,0; 0,0]	41,0 [22,0; 48,0]	<0,001
	III	147,5 [108,0; 195,0]	73,0 [50,0; 169,5]	0,004

II significant increase was registered only in «sexual arousal» and «orgasm» FSFI items. Another indexes in all groups had a general tendency to improvement, but statistically reliable differences were not showed.

Conclusion: All women with NDO together with strong urodynamic disorders suffered from significant reduction of SF. Two months after BTXA was noticed obvious urodynamic effect with the tendency to improvement of SF indexes, which however were not of statistical significance in most cases.

UP.570

Urodynamics Parameters and Metabolic Syndrome: Prospective Pilot Study

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Introduction and Objective: Metabolic syndrome (METs) is defined by the International Diabetes Federation as a "cluster of the most dangerous heart attack" risk factors. MET's would not only increase the risk of cardiovascular disease, but represents a significative risk factor for other oncological and non-oncological deseases. Moreover, in literature, have been underlined the correlation between METs and the pathophysiology of overactive bladder (OAB). The aim of our study was to evaluate the correlation between METs and urodynamic parameters in female patients with lower urinary tract symptoms (LUTS).

Materials and Methods: We prospectively enrolled 81 female patients in two Italian academic centers. All patients were evaluated with: urological history, bladder diary, blood values and a complete urogynecological and general examination and METs features. All patients underwent urodynamic evaluation according to the ICS Good Urodynamic Practice. Continuous normally distributed variables were reported as mean values and SD; chi square was used to compare categorical data and a $p < 0.05$ was considered to indicate statistical significance.

Results: According to the IDF Guidelines, 12 patients was affected di METs. Twenty eight patients were affected by stress urinary incontinence and 20 by urge incontinence. At urodynamic evaluation, mean cystocapacity was 386.5 cc and first desire presented at 156 cc; 61 patients showed, moreover, a detrusor overactivity (Table I). With regard to preoperative evaluation, presence of prolapse of any type or stress urinary incontinence did not showed a METs correlations ($p > 0.05$); on the contrary, the presence of urge incontinence was related with METs (p 0.03).

Conclusion: In literature Mets is a risk factor for OAB. We observed a correlation between MET's and urge incontinence. A correlation between OAB wet and METs could be hypothesized according literature.

UP.570, Table 1.

Clinical data	Mean	DS
HDL (mg/dL)	54.6	16.9
Triglycerids (mg/dL)	113.7	54.6
Fasting glucose (mg/dL)	101.4	25.7
Diastolic Press (mm/Hg)	77.7	10.4
Sistolic pressure (mm/Hg)	124.9	16.7
Waist (cm)	82.8	11.8
Urethral lenght (mm)	19.5	9.6
Volume voided (ml)	299.6	170.3
First desire (ml)	156.0	98.8
Normal desire (ml)	224.4	113.4
Strong desire (ml)	307.9	130.9
Cysto Capacity (ml)	386.5	149.9
Q max (ml/sec)	15.0	9.5
Pad/day (n)	1.8	2.2
Age (years)	62.5	13.4

Further RCT's are needed to confirm and validate our observations.

UP.571

Influence of Botulinum Toxin Type A on Urodynamic Parameters and Sexual Function in Women with Neurogenic Detrusor Overactivity

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Introduction and Objective: International recommendations provide a number of different treatment methods for chronic pelvic pain syndrome (CPPS). At the same time, guidance for selection of a particu-lar method is uncertain. We have attempted to separate CPPS patients into subgroups depending on the predominant symptoms and disorders to recommend them more rational and reasonable therapy.

Materials and Methods: One hundred and thirty four men 22-50 years old with CPPS were examined by: visual ana-logue scale of pain (VAS); IPSS/QOL, IIEF, NIH-CPSI questionnaires; ultrasound, urodynamic and neurophysiological studies.

Results: According to these results, patients were divided into 4 sub-groups: I - voiding dysfunction as predominant (n = 52); II - significant erectile dysfunction as predominant (n = 39); III - pain with neurophysiological changes as predominant (n = 31); IV - pain without identified neurophysiological pathology (n = 12). Patients received a differentiated therapy depending on the predominant symptoms: voiding or erectile dysfunction or pain. Effectiveness was assessed 3-4 weeks after the start of treatment. Patients of Group I were treated by botulinum toxin type A (BTXA) which was injected into the bladder sphincter or sphincter and detrusor depending on the identified type of disorder. Statisti-cally significant results were achieved for all parameters. Group II received sildenafil (50 mg/day). Obvious improvement was also noted in most cases. Groups III and IV were treated by baclofenum (60 mg/day) - a muscle relaxant of central action. We did not observe any credible effect in group IV in most settings. The table demonstrates dynamics (%) of the main studied parameters after treatment.

Conclusion: Understanding and detailing the mechanisms of disorders is a key to successful treatment. A differentiated approach to the therapy of CPPS has led to improvements in more than 90% of men generally. An effort to treat patients with unclear causes of their complaints was unsuccessful.

UP.571, Table 1.

Parameters / Groups	I	II	III	IV
VAS	-40.6*	-57.3*	-54.9*	-15.6
NIH-CPSI	-40.6*	-45.3*	-41.0*	-9.7
IPSS	-45.1*	-31.6*	-9.8	-36.7*
QOL	-41.5*	-33.3	-19.1	-38.5
IIEF	+41.1*	+36.2*	+23.2*	+13.6
Maximum uroflow rate (Qmax)	+47.2*	+11.0*	nd	nd
Urethral pressure point (UPP)	-17.8*	-8.1*	nd	nd
* Statistically significant difference				

UP.572

Intravesical Botulinum Toxin A in Patients with Spinal Cord Injury Causing an 'Unsafe' Bladder by Unmasking Poor Compliance

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Introduction and Objective: Botulinum toxin A (BTX-A) is an established treatment for neurogenic detrusor overactivity (NDO) in patients with spinal cord injury (SCI) refractory to medical management. Its efficacy and safety is supported by level 1a evidence. We report our case series of patients developing unsafe detrusor pressures post intravesical BTX-A treatment by unmasking poor compliance, not previously reported in the literature.

Materials and Methods: Four male patients with supraconal SCI managed in our supra-regional centre were identified. Bladder management comprised a combination of intermittent catheterisation (IC) and penile sheath collection. Videourodynamics (VUD) pre BTX-A showed evidence of NDO associated with detrusor sphincter dyssenergia with subsequent urinary incontinence. NDO and urinary incontinence symptoms were refractory to anti-muscarinic management and intravesical BTX-A was therefore offered. Post BTX-A VUDs were performed in the 4 patients due to ongoing symptoms.

Results: VUDs were performed within 4 months of 200 units BTX-A instillation. Detrusor pressure was noted to rise to >40cmH20 with bladder filling, in keeping with poor compliance and the development of risk to the upper urinary tract. Three patients proceeded to ileocystoplasty and one continued with IC and anti-muscarinic treatment awaiting surgery.

Conclusions: This small series highlights a possible dangerous consequence of BTX-A treatment in this select group of patients. Inhibition of detrusor contraction by BTX-A may impede return to safe detrusor pressures normally caused by subsequent urinary incontinence. BTX-A does not treat underlying poor compliance. The use of VUDs is essential in identifying this risk early and allows alternative treatments to be offered.

UP.573

Bladder Wall Thickness as a Predictor for Urodynamic Parameters in the Neurogenic Bladder Patient

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Introduction and Objective: Bladder wall thickness (BWT) is one simple, noninvasive test for evaluating lower urinary tract symptoms in neurogenic bladder patients. We aimed to see how this value correlates with paraclinical investigations during a prospective study.

Materials and Methods: During the last 18 months, a total of 48 patients, men and women, with neurogenic bladder of various etiologies were evaluated using a standardized protocol, including ultrasonography with BWT measurement and upper tract evaluation, invasive urodynamics and urinalysis. A statistical analysis was performed using the t-test. Abnormal BWT was considered anything above 3.3 mm in men and 3 mm in women measured on the anterior wall.

Results: All the patients in this series had an abnormal BWT as per our definition. Although infection was present in 69% of our patients (33 cases), no statistical correlation could be demosntrated. We observed that the higher the Pdet value is, the higher the BWT in many cases, however no statistical significance could be demonstrated. Also, no statistical correlation could be found between BWT and the presence of reflux or hydroneprosis. Detrusor sphincter dyssinergia (DSD) associated higher values of BWT ($p<0.003$). Lower bladder compliance is strongly correlated with the increase of BWT ($p<0.001$).

Conclusions: A higher BWT associates a lower bladder compliance and a higher chance the patient has DSD. BWT is not correlated with infection, nor with the Pdet value. There was no correlation between the BWT and the presence of reflux or hydroneprosis.

UP.574

Urodynamics after Failed Sling Procedure

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Introduction and Objective: Suburethral slings for stress urinary incontinence (SUI) are widely used nowadays because of their relative simplicity and high efficacy, but sometimes the patient remains symptomatic, even after a successful procedure. Our study reviews data from urodynamic testing of such patients.

Materials and Methods: Our retrospective analysis included 26 females, aged 29 to 68 years old who underwent TOT or TVT procedures for clinically diagnosed SUI. In none of these cases a previous urodynamic evaluation was available. Our evaluation protocol included history taking, clinical examination and pressure flow study.

Results: Clinically, our patients present signs of SUI, urgency incontinence or mixed incontinence, which are impossible to be objectively correlated with preoperative signs. None of the patients had pelvic organ prolapse at our examination and 77% had a negative Q tip test. Half of the patients were on antimuscarinic treatment for some time in the period after surgery and before our evaluation, but still not happy with the results. The urodynamic exam was normal in 38.5% of cases, showed signs of obstruction in 3 patients and demonstrated detrusor overactivity in 11 cases. The only possible correlation was that the patients with detrusor overactivity and urge incontinence had lower bladder capacities during urodynamics.

Conclusion: The ideal scenario seems to be the one in which all female patients undergo invasive urodynamics before surgery. Otherwise, the urodynamic exploration is only useful for confirming or not the symptoms and detrusor overactivity. One important aspect is that urodynamics is able to correlate sensations with detrusor activity, so a more targeted approach is possible.

UP.575

Intra-Individual Comparison of 18F-Labelled PSMA-1007-PET/CT, Multi-Parametric MRI and Radical Prostatectomy Specimen in Patients with Primary Prostate Cancer

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Introduction and Objective: 68Ga-prostate-specific membrane antigen (PSMA)-11-positron-emitting-tomography (PET)/ computer-tomography (CT) represents an advanced method for diagnosis of recurrent or metastatic prostate cancer but has limitations due to short half-life of 68Ga, narrow availability and urinary clearance. To examine the value of the new PET tracer 18F-PSMA-1007 tracer for staging of local disease by comparing it to multiparametric magnetic resonance imaging (mpMRI) and radical prostatectomy (RP) histopathology.

Materials and Methods: In 2016, 18F-PSMA-1007-PET/CT was performed in 10 men with biopsy confirmed high-risk prostate cancer (PCa). Nine patients underwent mpMRI in the process of primary diagnosis. Consecutively, RP was performed in all 10 men. Agreement analysis was performed retrospectively. PSMA-staining was added for representative sections in RP specimen slices. Localization and agreement analysis of 18F-PSMA-1007-PET/CT, mpMRI and RP specimen was done dividing the prostate into 38 sections as described in PI-RADS v2. Sensitivity (SE), specificity (SP), positive predictive values (PPV), negative predictive values (NPV) and accuracy were calculated for total and near total agreement.

Results: 18F-PSMA-1007-PET/CT had 68.2% NPV and 75.3% accuracy and mpMRI had 88.2% NPV and 72.5% accuracy for total agreement. Near total agreement analysis resulted in an NPV of 91.1% and an accuracy of 92.6% for 18F-PSMA-1007-PET/CT and 90.0% and 87.4% for mpMRI, respectively.

Conclusions: The comparison with RP histopathology demonstrates that 18F-PSMA-1007 PET/CT is an ideal method to determine local staging of PCa.

Nursing Unmoderated ePosters

Friday, October 20 - Sunday, October 22
0800-1800

NURS-01

Application of Pathway-Based Standardized Health Education with Self-Nursing of Patients with Neurogenic Bladder in Intermittent Catheterization

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Introduction and Objective: To observe the effect of standardized healthy education with self-nursing in patient with neurogenic bladder in intermittent catheterization.

Materials and Methods: One hundred and twenty patients with neurogenic bladder were randomly divided into trial group (n=62) and control group (n=58). The control group was given nursing care by traditional mode and the trial group was given nursing and guidance by the form of standardized healthy education. The awareness rate of knowledge, medical advice compliance rate and the hospital stay in two groups were compared before intervention after discharge of hospital.

Results: The awareness rate of knowledge and medical advice compliance rate in trail group were obviously higher than in control group (P<0.05); there was significant difference in hospital stay between two groups (P<0.05).

Conclusion: Standardized healthy education is more satisfactory than traditional health education mode for improving self-nursing capability in patients with neurogenic bladder in intermittent catheterization as well as shortening hospital stay.

NURS-02

Design and Clinical Application of Nephrostomy Tube Fixation Belt with Anti-Detachment and Anti-Pressure Function

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Introduction and Objective: The paper is to discuss clinical application effects of the self-designed and produced nephrostomy tube fixation belt.

Materials and Methods: A total of 195 inpatients with post-PCNL nephrostomy drainage tubes were divided in the observation group (n=100) and the control group (n=95) by random number table method. For the control group, a routine method (two towels and tape) was used for lift and fixation of nephrostomy tubes; while for the observation group, the self-designed nephrostomy tube fixation belts with anti-detachment and anti-pressure function were used for fixation.

Results: The nephrostomy tube detachment rate, nephrostomy tube blocking rate and occurrence of pressure sores are all lower than the control group (P<0.01), and the satisfaction rate for pain management is higher in the observation group than the control group (P<0.01).

Conclusion: The anti-detachment and anti-pressure nephrostomy tube fixation belt can be applied to reduce nephrostomy tube detachment rate and nephrostomy tube blocking rate and to relieve pain, skin discomfort and other problems. It is easy to use and safe, and worth of clinical popularization and application.

NURS-03

Improving Education of Intermittent Self-Catheterization by a Patient Centered Approach

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Introduction and Objective: Intermittent self-catheterization (ISC) is the gold standard for managing chronic urinary retention, allowing patients to improve their quality of life and avoid urinary tract infections and the associated complications. Patient education needs to have a structured but individual focused approach. Previously non specialized general nurses educated patients to perform ISC and all patients had to stay overnight in hospital. This is not a patient centered approach first because not all patients need the same time to learn ISC and second because a high quality of education cannot be maintained with non-specialized nurses.

Materials and Methods: To optimize both, quality of ISC education and procedure, a team of 8 urologic nurses was trained to educate patients in ISC according to EAUN guidelines "Catheterization urethral intermittent in adults". To satisfy patient's individual needs two different patient pathways, one for outpatients and one for inpatients, were developed and implemented.

Results: In the year 2016 N=101 patients age 19 to 85 (mean 59, median 66, 50 men, 51 women) were educated by the specialized nursing team. 89 patients learnt ISC in an ambulatory setting, 12 stayed overnight, only 10 failed to perform ISC. Indications for ISC were: detrusor underactivity (n=65), urethral stenosis (n=23), botox injection (n=9), other reasons (n=4). The shortest stay lasted one hour, the longest 8.5 hours (mean 3.8, median 3.5). The 12 inpatients stayed 1-2 day in hospital. Telephone follow up after 1 week showed that most patients (=94) were very satisfied with the education and felt very confident performing ISC at home.

Conclusion: To learn ISC patient's physical and cognitive conditions are more important than age. The flexible model allows patients to stay according to their personal needs as long as they require to feel safe performing ISC. The majority of them was able to learn ISC in an ambulatory setting. They were very satisfied with the education procedure and felt confident to go home and perform ISC themselves.

NURS-04

A Body-Oriented Counselling Approach Supports Patients to Overcome Side Effects Following Radical Prostatectomy

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Introduction and Objectives: Prostate cancer (PC) was the third leading cause of cancer deaths in Swiss men, 2009-2013. Although nerve-sparing radical prostatectomy provides good post-operative functionality, patients often experience difficulty in adapting to their new life. Emotionally suffering, they often require individualised supportive counselling. A Swiss university hospital has launched an Advanced Practice Nurse (APN) counselling program in 2013 and complemented the program by a body-oriented counselling approach (BOCA) to follow actual recommendations in 2017.

Materials and Methods: With the aim of enabling effective regulation, we used Desjardins' BOCA "Sexocorporel" – covering physiological, affective, cognitive and relational components – to better understand patients' bodily experiences and perceptions. Patients were instructed and practiced body tension, breathing techniques and rhythmic exercises to improve body awareness.

Results: From January to March 2017 45 men received BOCA (approximately 0.5 to 1 hours counselling period), with an average age of 66.6 ± 7.5 years (range 54-81). Of those, 9 (20.0%) men requested additional BOCA to handle side effects (totaling 10 counselling hours). Consecutively our first experiences are summarized and described analogous to the mentioned components. Physiology: Patients experience core body functions: breath, muscle tension and movement. Patients report how they integrate body knowledge to help living more self-determinedly. Emotion/cognition: Patients describe emotions about living with side effects. Patients experience that cognitive knowledge had become part of their everyday life. Relation: Patients recognize their roles and partners need involvement in the coping process. Both patients and partners need support on how to do that. Patients don't want to be reduced to experienced side effects, most importantly not by their partners.

Conclusion: Our preliminary experience indicates that BOCA supports patients in improving abilities to overcome physical and emotional side effects of diagnosis and treatment. Patients learned to integrate body experience into everyday life to better cope with the burden (physical/emotional), enabling them to improve their self-efficacy. The interplay between body, cognition and emotion is necessary to cope with uncertainty and confidence in bodily function. Further studies shall verify the effect of this body-oriented approach.

NURS-05

Quality of Life in Patients Undergoing Long-term Urinary Catheters

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Introduction and Objective: Ureteric obstruction by intrinsic or extrinsic cause is the main indication of temporary urinary diversion. These are minimally invasive procedures which help the evacuation of urine through the aid of internal (double J stent) or external (percutaneous nephrostomy) endoprosthesis. The aim of this study is to identify the detriment of quality of life on patients with long-term urinary diversions.

Materials and Methods: An observational, descriptive and transversal study was performed on a total of 35 patients, 18 underwent percutaneous nephrostomy (NPC) and 17 double-J stent, with urinary tract obstruction. Each patient completed a questionnaire, which included a quality of life index (SF-36) and specific questions to assess urinary symptoms, pain and associated problems. Likewise, a kidney ultrasonography was performed as well as a blood analysis to assess renal function.

Results: Patients median age was 58.8 ± 15.8 years old, with male to female ratio 1:1. The most common causes of obstructive uropathy were stone disease and neoplasia. Complications in both groups were irritative urinary symptoms, hematuria, pain, infections and catheter blockage. Double-J stent patients experienced worse quality of life than percutaneous nephrostomy; however, these differences were not statistically significant.

NURS-05, Table 1. Categories SF-36

	Mean	SD	Contrast	p-Value	Effect size
SF 36 Physical Functioning			U= 116.50	p= 0.227	r= 0.204
Group 1	59.17	21.38			
Group 2	46.18	28.64			
SF 36 Role-Physical			U= 132.00	p= 0.456	r= 0.126
Group 1	38.89	40.42			
Group 2	32.35	45.73			
SF 36 Bodily Pain			T= 2.111	0.042*	d= 0.345
Group 1	65.86	26.07			
Group 2	45.00	32.23			
SF 36 General Health			T= 1.424	0.164	d= 0.241
Group 1	42.78	15.83			
Group 2	52.06	22.36			
SF 36 Vitality			T= 0.929	0.360	d= 0.160
Group 1	52.78	20.02			
Group 2	45.29	27.30			
SF 36 Social Functioning			T= 1.575	0.125	d= 0.264
Group 1	70.56	20.51			
Group 2	56.76	30.58			
SF 36 Role-Emotional			U= 114.00	p= 0.156	r= 0.240
Group 1	70.39	42.62			
Group 2	47.06	48.70			
SF 36 Mental Health			U= 114.00	p= 0.197	r= 0.218
Group 1	62.67	14.13			
Group 2	53.88	25.85			

NURS-05, Table 2. Complications

	Group 1 (N=18)	Group 2 (N=17)			
	N (%)	N (%)	Contrast	p-Value	Effect size
No	7 (38.9%)	3 (17.6%)			
Yes	11 (61.1%)	14 (82.4%)			
Infection	6 (33.3)	5 (29.4)			
Displacement	0 (0.0)	1 (5.9)	x^2=1.93	p= 0.164	0.235
Obstruction	5 (27.8)	1 (5.9)			
Bleeding	0 (0.0)	7 (41.2)			

Conclusion: Temporary Urinary diversion, both NPC and JJ, generate an important worsening of quality of life, which is even greater in patients carrying double-J stents. Similarly, JJ produces more irritative urinary symptoms and greater pain.

NURS-06

Role of Transarterial Embolization in Malignancy Associated Refractory Heamaturia

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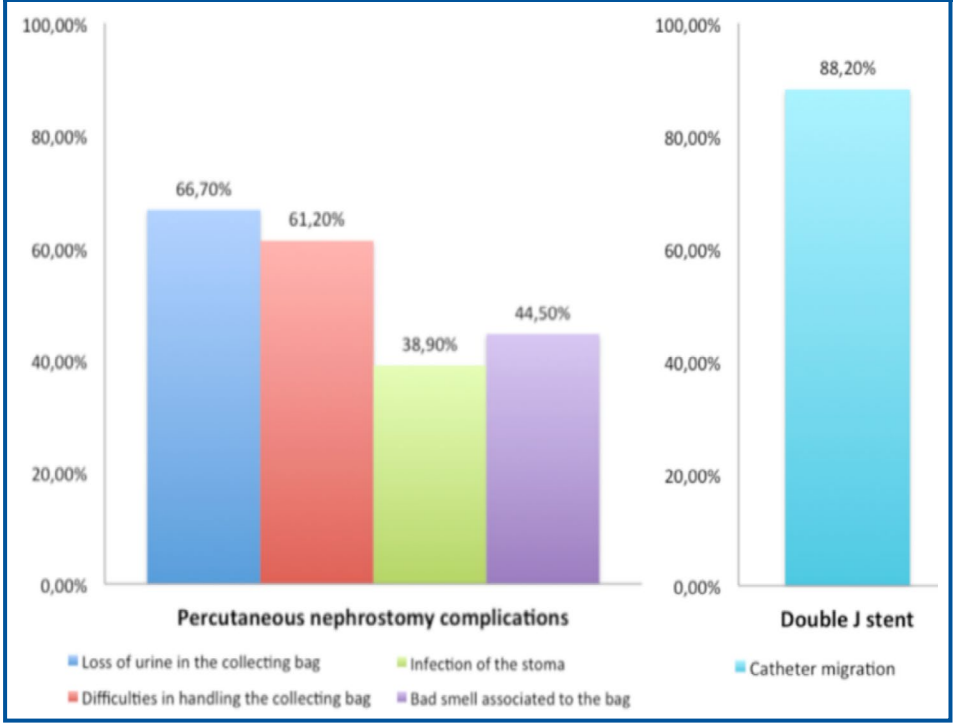
Introduction and Objective: Haematuria is a common symptom in patients with advanced urological tumors. When bleeding fails to respond to conservative management, selective transarterial embolization (TAE) is a well described minimally-invasive technique for control of severe haematuria. We report our experience of selective TAE in patients with intractable hematuria related to advanced urological tumors. To our knowledge there are few studies on this issue reporting the long-term outcomes of TAE in this setting, hence it is important to gather all recorded data.

Materials and Methods: A retrospective analysis of 6 male patients (mean age 81 years) with intractable haematuria secondary to advanced urological tumor, in whom selective TAE was performed between January 2012 and March 2017, was carried out. In 5 cases, embolization was performed due to bladder cancer and in 1 case due to renal carcinoma, as palliative procedures.

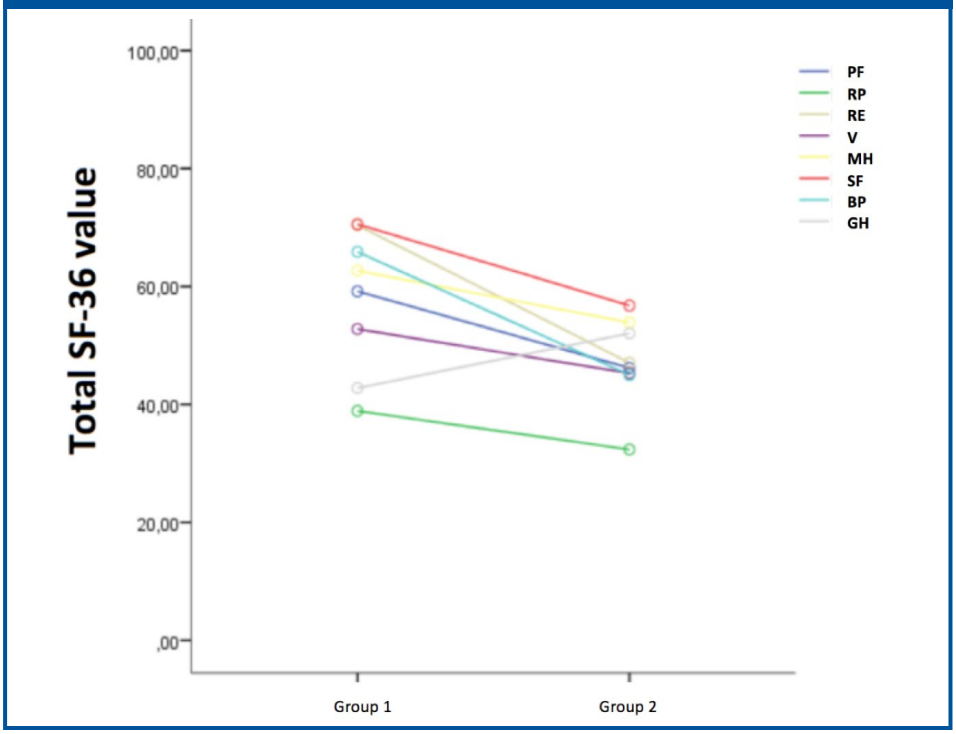
Results: Internal iliac or renal selective TAE produced initial complete control of bleeding in 4 of the 6 patients. At a mean (range) follow-up of 4.3 (1-8) months TAE there was permanent control of bleeding in 3 patients. Patients required a mean of 5 (2-11) transfusion units before embolization; 4 patients required more blood products after TAE. The mean haemoglobin level before and after TAE was 8.5g/dL and 9.0g/dL, respectively. During the follow-up, there were few complications related to TAE: gluteus necrotic ulcer in 1 patient and gluteus pain in 3 patients. The 3- and 6-month mortality rates were 50% (3 patients) and 66% (4 patients), respectively.

Conclusion: Fluoroscopic-guided embolization is a safe and effective method for palliating haematuria in patients with advanced urological cancers. TAE is a minimally-invasive intervention carrying low risk of major complications. We reported 2 minor complications. We did not register any case of post-embolization syndrome, although it is reported in literature to occur in two-third of patients. In the majority of published series, haematuria decreases and the quality of life improves, after palliative embolization. The advanced age in our limited population, associated with more morbidities and poor performance status, as well as the high stage disease, may justify the poor outcomes.

NURS-05, Figure 1. Individual Complications of Percutaneous Nephrostomy and Double J Stent



NURS-05, Figure 2. Comparison between SF-36 Subdimensions in Both Groups of Urinary Diversions



NURS-07

The Application of Risk Management in the Department of Urology Nursing Management

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Introduction and Objective: To explore the application of risk management in the Department of Urology nursing management.

Materials and Methods: High risk of pipeline slippage establish "pipeline slip high risk factors and preventive measures of records", evaluate, develop pipeline spondylolisthesis cluster management strategy, organize all the nurses to learn assessment, to the patient and family health education, with the management of quality control at any time.

Results: In 2016, our hospital had no adverse events, reduced disputes and complaints, improved patient satisfaction.

Conclusion: With the improvement of technical level of operation, various pipeline patency and durability requirements are increasingly high, take the risk management system in the pipeline management, can effectively avoid the pipeline slippage risk, improve risk control ability of nurses, guarantee the pipeline safety of patients, improve patient satisfaction.

NURS-08

Nursing Care for Patients with Transumbilical Single Port Laparoscopic Radical Nephrectomy

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Introduction and Objective: To study the nursing key points for patients with laparoendoscopic single site surgery (LESS), single port laparoscopic radical nephrectomy.

Materials and Methods: Systematic nursing care include pre-operative, post-operative care and discharge guidance. Pre-operative nursing included: (1) Psychological nursing: to eliminate anxiety before operation. (2) Diet nursing: to provide high protein, high calorie and rich in vitamins intakes; to correction anemia, electrolyte imbalance. (3) Images preparation: to assist patients complete routine examination, including CT or MRI scans. Post-operative care included: (1) Activity: to encourage early bed-side activity. (2) Hypercapnia: postoperative should be given low flow, intermittent oxygen inhalation to promote CO2 discharge. Patients with fatigue, irritability, slow breathing, facial cyanosis or arrhythmia should be highly concerned. (3) Bleeding: drainage tube and wound exudation should be closely concerned in the first 24 hours. (4) Pain management: effective patient control analgesia (PCA) should be given. (5) Diet nursing: liquid diet in the first 6 hours could be gradually changed to normal diet. Discharge guidance included: (1) Aerobic exercise is appropriate in the first 2 weeks. The amount of activity should be recommended gradually and progressively. (2) Nephrotoxic drugs should be avoided. (3) The details for follow-up schedule should be guided to the patients for contra-lateral renal function and oncological outcomes evaluation.

Results: All the patients were successfully performed LESS surgery and discharged from the hospital. No postoperative complication was reported.

Conclusions: The transumbilical single port laparoscopic surgery was advantageous in small incision, good cosmetic effect, low incidence of incision related complications, negligible postoperative pain and fast recovery. With preoperative psychological care, postoperative care and bed-side observations, the patients

performed LESS could have satisfactory outcomes and no complication.

NURS-09

DACOACH—Feasibility of Data-Guided Health-Coaching via Mobile and Wearable Devices in Chronic Care Management

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Introduction and Objective: Empowering patients to take a more active role in the course of their disease has been shown to increase compliance and quality of life. The objective of this pilot study was to explore an intervention offering self-tracking and health-coaching for better self-management of chronic urological disease. The hypothesis is, firstly, that patients will achieve an increased understanding of their health situation and their own possibilities of influencing this situation. Secondly, the data will help create a greater sense of control.

Materials and Methods: Between September 2016 and February 2017 two patients were included in an individually self-tracking and coaching-program. One prostate cancer (PCa) patient in active surveillance and one patient with urolithiasis. The PCa patient was equipped with a FLIC bluetooth button and tracked restless legs. The urolithiasis patient was equipped with a smartwatch, tracking pain, fluid- and sugar-intake. The data was used to identify possible underlying factors causing health problems. These insights were used as part of the coaching-process.

Results: The preliminary findings showed that the PCa patient suffered from restless legs which disturbed his sleep every night. He had a prescription of medication against restless legs but was hesitant to use it, so the first step in the coaching session was to learn the importance of a good sleep and the necessity of taking his medication. After adjusting his medication, he achieved a good sleeping pattern, which gave him energy to lead a healthier lifestyle. For the urolithiasis patient it appeared that he had a high intake of sugar in the hours prior to a stone attack. In the coaching session it was discussed, if this could be a way of relieving the pain and it was hypothesized and investigated if high sucker intake could promote stone attacks'.

Conclusion: Data-guided health coaching (DGHC) may base on the results from this pilot study have the potential to empower urological patients to better self-management of chronic disease. More studies are needed to explore the intervention further and to define the exact role of DGHC in management of patients with chronic urological disorders.

Nurs-10

Experiences of Specialist Nurses Working within the Prostate Cancer Multidisciplinary Team in the UK

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Introduction and Objectives: UK prostate cancer nursing care is provided by a variety of urology and uro-oncology nurses. The experience of working in multidisciplinary teams (MDT) was investigated in a national study. The study consisted of a national survey with descriptive statistics and thematic analysis.

Materials and Methods: A secondary analysis of a data subset from a UK whole population survey was undertaken (n=285) of the specialist nursing workforce and the services they provide. Data was collected on the experience of working in the MDT.

Results: Forty-five percent of the respondents felt they worked in a functional MDT, 12% felt they worked in a dysfunctional MDT and 3.5% found the MDT meeting intimidating. Thirty four percent of the nurses felt they could constructively challenge all members of the MDT in meetings. Themes emerging from open-ended questions were lack of interest in non-medical concerns by other team members, ability to constructively challenge decisions or views within the meeting and little opportunity for patient's wishes to be expressed.

Conclusions: Despite expertise and experience nurses had a variable, often negative, experience of the MDT. It is necessary to ensure that all participants can contribute, are heard and are valued. More emphasis should be given to patient's non-medical needs.

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